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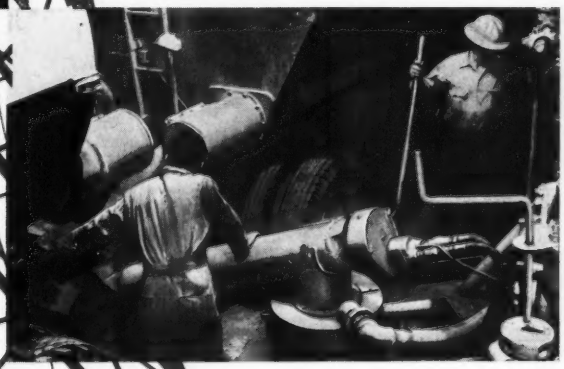

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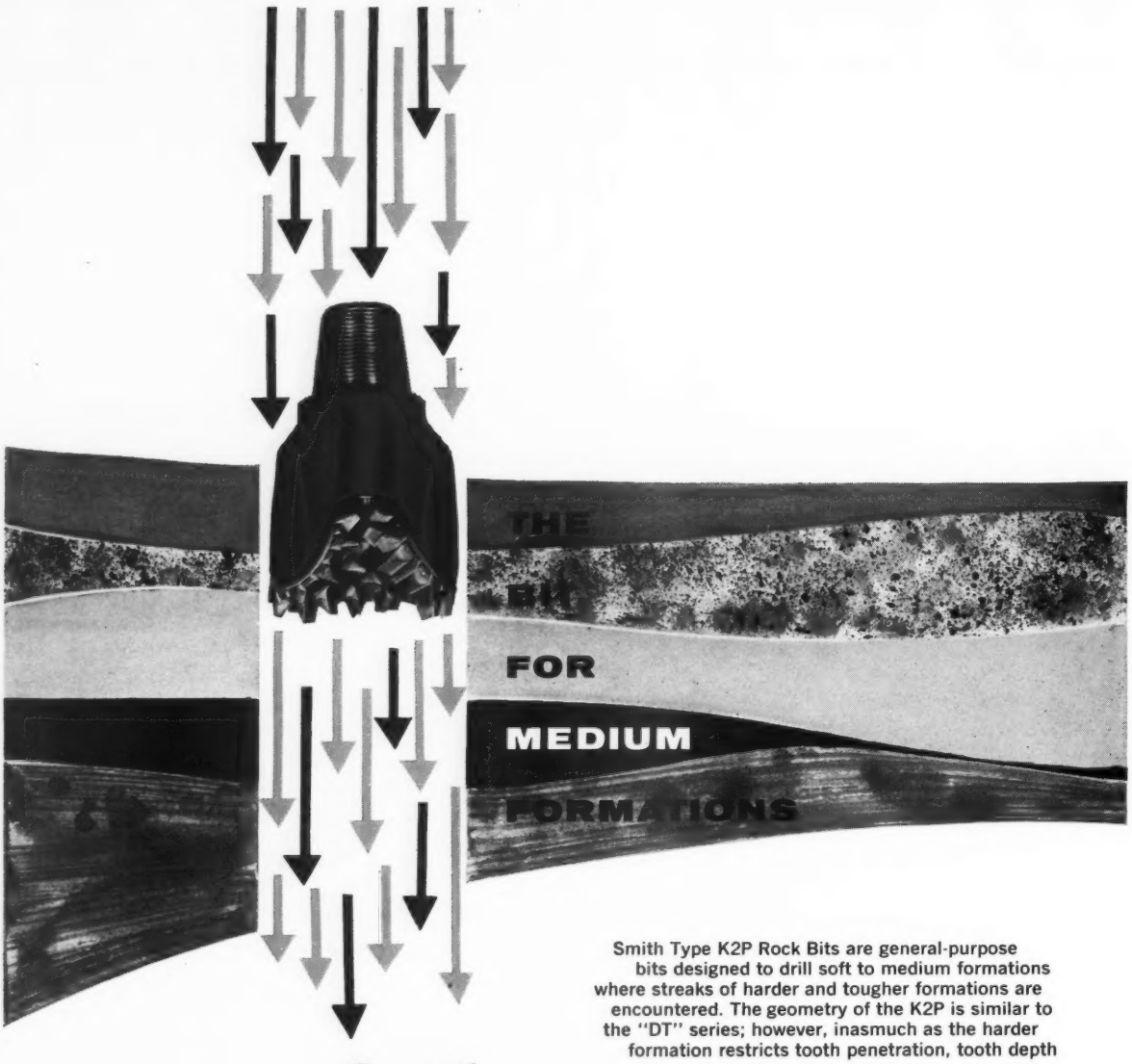

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Economics of Offshore Oil

An address by K. H. CRANDALL, Vice President, Exploration, Standard Oil Company of California Before the 1960 Convention of the American Association of Petroleum Landmen, Ambassador Hotel, Los Angeles, California - Friday, June 24, 1960

I am particularly happy that you have seen fit to offer me the use of this rostrum for the next few minutes as there are several matters of common interest which I would like to talk over with you.

This audience *is* rather imposing not only from its size, but also because of the wide area from which it has been drawn and the many talents which it represents.

These many talents I refer to are combined in what must be one of America's most vibrant and interesting fields of personal endeavor. After all, what vocation on the economic scene has a more exciting evolution than the landmen's?

Might I say in passing that while the landman has learned new skills and taken on new stature, he has retained something of the basic character which has made him legendary in oil circles at least. There is still a touch of "Sign-em-up McCloskey" in each of you.

I would like to outline some of the problems mankind faces as it tries to unlock the treasures of offshore oil.

It is evident that the problems inherent in offshore oil operations are of such scope that in years to come they will offer more than a little challenge to all of us. As this topic develops this morning bear in mind that we're talking about oil offshore in North America, principally in the Gulf of Mexico and off California.

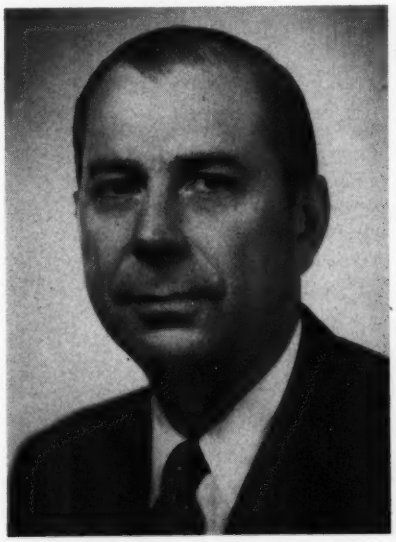
So what are these problems?

Only recently, Ira Cram, senior vice president of Continental Oil Company, issued a statement that was reported widely in trade journals and which you probably read. One of the most significant figures was written as follows—$1,869,000,000. This, he told us, is how far short the industry is of paying out its offshore investment in Louisiana alone. And this figure does not include administration, overhead or operation expenses.

How close are we to breaking even? Mr. Cram sums it all up by saying and I quote, "We trust that we can shift into the black and stay there, but even if we do we will be a long time reaching the point where we have received revenues fully repaying our outlay."

May I also read to you the last paragraph of a report that came to my desk the other day from one of our own companies which is active in offshore work. It reads as follow:

"In conclusion, it seems clear that the industry should carefully consider its policies if it is to maintain satisfactory profit standards in offshore operations where unavoidable costs resulting from many things have already imposed major economic obstacles."



Kenneth H. Crandall

As you can see from these two statements, there is a good deal of apprehension about the future of this new oil frontier. We've poured billions into its development and received only a few millions in return. It also appears that we are in for a good long wait before we get much more.

All this speculation leads one to ask two prime questions.

One, if things are that bad, why are we there in the first place?

Two, what makes the costs so high and the risks so great and what can we do about bringing them both down to reasonable levels?

The first question as to why we are there is answered simply—there is a Lorelei offshore who sings a persuasive song as strong as any ever heard by Ulysses. This hypnotic witch seems to be drawing oilmen to her, at whatever the cost, with the whispered promise of a new Spindeltop or Signal Hill.

So much for motives. I suppose that there are others such as increasing demand, the urgency of defense, the fear of being left out of an industry play and several others, but the principal answer to the question of

why we are there remains the same. Under favorable economic and political conditions there is a chance to make money and we intend to take that chance. In this we are dealing with nothing more than the normal instincts of the free enterprise businessman.

So, as of today, we can say that the oil industry, literally and figuratively, finds itself at sea.

There are a few main problems offshore which are worth discussion today. These are costs, government actions, industry actions and the paramount issue, at least in the Gulf of Mexico, of allowables. Let's take them one by one and see if a general conclusion results. All are directly related to the economics of finding and producing oil offshore.

In the matter of costs, may I call your particular attention to the June 6 issue of the Oil and Gas Journal. Here you will find an excellent detailed study of the dollar by dollar economics of offshore exploration and production.

Many of the figures you will have seen before but on Page 105 is a particularly vivid presentation. Here are outlined the costs of drilling a well offshore Cameron Parish, Louisiana. The total cost of the well itself is listed at $822,344. This is the average cost of 26 wells drilled from tender type platforms in 50 to 60 feet of water.

Of this figure, 53 per cent—more than half the cost—is attributable *directly to the well being offshore rather than on.* That same well, drilled to the same depth, would have cost less than $400,000 had it been drilled onshore.

Things are looking up. Oilmen have decided that they are going to have to do some pretty special things in the way of cost reductions offshore and these special things are afoot today in many areas.

The permanent platform with its expensive tender is giving way in exploration to the mobile rig and the floating vessel. Dominion Oil Company, for instance, has drilled a discovery well past 11,000 feet off Trinidad from a floating vessel anchored in more than 100 feet of water using techniques learned off the coast of California. This promises mobility, flexibility and maximum usage. Best of all it provides some answers to the problem posed by the need for expensive on-site facilities.

Another factor is that contractors, using the best available techniques, are bidding lower and lower in an effort to remain competitive and they are doing a good job of it. The result is still more cost reduction.

Where the reservoirs permit, the current trend has been toward multiple completions. These permit more efficient production and a broader recovery of oil with a minimum of the costly drilling peculiar to these operations. More about this later.

Again, in the Gulf and in some places off California, high cost barging has been replaced by a growing network of oil and gas pipelines built into an extensive gathering system.

The possibility of underwater completions is receiving increased attention from industry researchers. If this problem can be licked, the industry stands to save still more in years to come.

All in all, oilmen have used the experiences of the past decade to sharply reduce their costs offshore. It still remains the most expensive method we have found of developing and producing oil but the figures are looking better each year. The only thing our industry has to be sure of is that it continues this cost reduction work which will become increasingly important as the water gets deeper and the pay sands get harder to find.

But what about the other problems we mentioned a moment ago. How about these things I defined rather loosely as government actions and industry actions? The two are closely related one to the other and neither is anywhere near as tangible as cost reductions and improved techniques. Both are equally important, however.

What we ask of government is, in substance, nothing more than the cooperation necessary to promote maximum offshore production at minimum costs. Such a goal, containing as it does the chance for companies to make a reasonable profit and the promise that the states involved will gather increased receipts from a growing resource, is most assuredly in the best interests of all concerned.

Until we achieve these things, it is not stretching the point to say that the oil companies engaged in offshore work are approaching the end of their economic tether, with little chance to extend or increase their reserves. Through it all, I do not believe that the industry in this case is simply crying "wolf."

There is also a field in which the industry itself should watch its "P's and Q's" a little more closely.

Concern is mounting in many oil circles that the biggest rocks in the roadway as far as oil offshore is concerned are the bidding practices now employed by many companies. An increasing number of people feel that regardless of the bidding rules, royalty or bonus, the offerings are getting to be so high as to make them economically senseless. There is certainly a growing need for a little more temperance on the part of individual companies when it comes time to bid on offshore parcels under whatever method they may be offered.

So, in view of all this, and much more which remains unsaid today, what is the future of offshore oil? I think the average outlook ranges from qualified pessimism to guarded optimism with the latter more predominant here in California.

In this state, our offshore domain has been re-opened for only about three years. All of us, both the industry and the state agencies involved, are still feeling our way along. The newly appointed State Lands Commission has shown a great deal of understanding in its first few months of administering lands which may or may not hold new-found-treasure. They have candidly asked for industry assistance in developing offshore policies and the industry has responded, not in unanimity of course, but at least with sincerity.

Such an approach to mutual problems speaks well for the future and seems to indicate that the state has every intention of guiding the development of this offshore domain with studied thoughtfulness.

There are some things, however, which need to be done here, such as a more formalized approach to hearings. Under present circumstances the California oil industry cannot plan its exploration programs or its offshore budgeting with any great degree of self-assurance because there is no scheduled program for holding lease sales.

But, these problems are being worked out and I think that the climate out here looks good for offshore work. With the help of the state I believe that Californians will soon get answers to two of their biggest offshore questions—namely, is all that oil really out there and will it be administered to the best interest of all concerned.

The answer to the first can only be the promise that we will go out and

see. The answer to the second, I hope will be "yes."

But it will be the same here as elsewhere—a touch and go operation. There is, as a matter of fact, one parcel of offshore land in California which serves as an outstanding example of just what an economically precarious venture underwater exploration and development can be.

I refer to the 5500 acre Summerland tract held jointly near Santa Barbara by my company and Humble. Perhaps you would be interested in a few facts and figures, many of which we have not discussed publicly up to now, which show how marginal offshore work can be, even in the presence of the best royalty rate granted so far.

In late 1957, immediately after enactment of the state's tidelands Act, Standard and Humble bid seven and one quarter million dollars for the tract which was awarded to them on the basis of a twelve and one-half per cent royalty. It was the only tract awarded on this basis before the royalty was shifted upward a few months later.

As of June 1 of this year, the two companies had spent more than 25 million dollars on the property—this includes the bonus payment. At that time they had one platform on site from which 14 wells had been drilled. Five of them were dry.

Another platform was barely in place on the site. Submarine pipelines were laid and onshore producing facilities were at work. Here, briefly is how the costs for all this have broken down so far.

The bonus was seven and one-quarter million. The first platform cost four and one-half million including power cable and equipment. Pipelines were 750,000 dollars and onshore facilities added another million and a quarter. Daily drilling costs for the platform and its two rigs have averaged ten thousand dollars a day since the first well was spudded in 1958. This figure alone amounts to more than seven million dollars so far.

The second platform and all its equipment will represent an additional expenditure of four and one-quarter million, bringing total expenditures to 25 million dollars.

In return for all this investment, the companies are now enjoying production of oil at a rate slightly in excess of 2400 barrels a day and the best *present* estimates place the proven and potential reserves of oil and gas equivalent at somewhat less than 15 million barrels, recoverable and in place at Summerland.

While these last figures may change, our best projections indicate that the chance for any profit at Summerland is vague. On this parcel we were fortunate enough to have a successful exploratory discovery, which we are developing and producing under the best engineering practices learned through long experience. We are operating as economically as possible. We are favored with a low royalty rate and we are under no allowable restrictions. Yet we may still be only "swapping dollars," or even losing them.

But what are the implications of such a marginal operation? What if the bonus bid had been a little higher? What if the royalty rate was less favorable? Would that chance for a profit still exist? Of course not. Would serious businessmen have been willing to invest their money in this enterprise? Again, of course not.

And, in passing, without percentage depletion, could we have gone out there in the first place?

In California or elsewhere, all this argues for what I've been talking about all along—the most thoughtful possible approach by all parties concerned to the many and varied economic and operating problems we face offshore.

Personally, I feel that the Federal Government, the states, the cities, the individual citizens and the companies involved *will* approach these problems with the best possible combination of understanding, caution and initiative.

In such an atmosphere of mutual understanding, the number of our problems will decline while we continue to increase the number of barrels we produce in years to come for ourselves and for our fellow citizens.

Oil Companies Spend $50 Million for Smog Control; Los Angeles Equipment Biggest Expenditure

WOGA's Technical Subcommittee on air pollution control reports that nine oil companies spent $47,037,183 for air pollution control equipment in their Los Angeles installations from Jan. 1, 1948 to Dec. 31, 1959. An additional $3,339,594 was spent for research in this period.

Companies included in the $50,376,777 figure for air pollution abatement are Mobil Oil Co., Richfield Oil Corp., Shell Oil Co., Signal Oil and Gas Co., Standard Oil Co. of California, Texaco Inc., Tidewater Oil Co., Union Oil Co. of California, and Wilshire Oil Co. of California.

Richfield Oil Corporation's Well No. A-210 in Long Beach Harbor Parcel "A." Left to right: Robert Wentz, head well puller; Chad Bardone, derrick; Bob Kite, floorman; Marvin Wheeler, floorman, and C. H. Turpin, field service man.

ATTEND BJ SERVICE ANNUAL MANAGEMENT MEETING—Standing, left to right: L. H. Kaltenberger, B. L. Crone, R. H. Jackson, C. W. Ludwig, C. C. B. Moody, J. T. Streger, J. L. Replogle, M. B. Riordan, Al Graff, J. L. Buster and A. M. Birnie. Seated, left to right: W. T. Box, John B. Merritt, C. Z. Hughes, C. L. Sorrentino, C. R. Cross, R. P. Maddox, A. T. Jones, J.C. Jackson and C. F. McMahan.

Alloy Steel Products Co. Appoints Keenan Distributor

Appointment of Keenan Pipe & Supply Co. as distributor for the Southwest of Aloyco Valves by Alloy Steel Products Co. of Linden, New Jersey, has been announced by P. T. Keenan, president. The firmly-entrenched and fully-tested "Aloyco" line includes a broad range of gate, globe and needle, check and foot, angle and "Y," sampling and tank valves made of corrosion resistant alloys that are widely used in the missile, chemical, petroleum, and other industries. Keenan will maintain complete stocks in its headquarters plant in Los Angeles and branches in North Hollywood, Bakersfield, San Bernardino, San Diego, Phoenix, Tucson, Las Vegas and Denver.

In addition to the new "Aloyco" line, many thousands of items are stocked by Keenan in all of its branches including the following: National Tube Oil Country Tubular Products, National Tube Welded and Seamless Pipe, Crane Steel, Iron & Brass Valves, Crane Plumbing and Heating equipment, Walworth Plug Valves, Ladish Welding Fittings, Reznor Heaters, Sunroc Water Coolers, Ridgid and Proto Tools, and many others.

California Companies Drill in Mississippi

State Exploration Company has announced spudding of a 10,200 foot test well on a 7,000 acre block of land at Poplarville, Mississippi. State retains a 50 per cent working interest with the remaining 50 per cent divided between two operating partners, Union Oil Company of California and McCulloch Oil Exploration of California.

The well is State Exploration; Crosby-Southern Minerals Number 1.

Golden Eagle Refining Co., Inc. Takes Stand on Russian Oil

Golden Eagle Refinery Company, Inc. (California) and Golden Eagle Refining Company of Canada Limited have advised all ship brokers and owners of their decision to refuse all future tanker charter and/or ships bunker sales with companies or persons currently or in the future assisting towards the advancement of the Russia/Cuba petroleum alliance.

W. L. Theisen (Marine Manager for both the American and Canadian Golden Eagle Companies) stated "a prompt and firm policy, even from us smaller companies is required to stop the degradation of Cuba's petroleum industry which is being perpetuated by the cooperation of ship owners and brokers who charter for deliveries of Russian crude to the refineries recently confiscated."

The Golden Eagle companies recently acquired as 100% subsidiaries of Ultramar Limited (fourth largest British petroleum company) are currently chartering both clean and dirty ships.

Golden Eagle will not charter tankers from owners who charter or sell to the Russians for any trade including Cuba, or deal with brokers if they are now acting or hereafter will act as intermediaries in the Russian/Cuba trade. Further, they will not sell bunker fuel from their West Coast U.S.A. or Eastern Canada facilities to any vessels, tankers or dry cargo ships, currently or in the future participating in the Russia/Cuba service.

BJ Holds Annual Management Meeting

At an annual management meeting just completed by BJ Service, Inc. in Fort Worth, company executives formulated operating plans for the next 12 months. The meeting was headed up by John B. Merritt, president. Separate sessions were conducted by Vice Presidents W. T. Box, M. B. Riordan and A. M. Birnie. Division managers and other key administrative and sales personnel who were present were briefed on their responsibility in helping to reach BJ's immediate goals.

A detailed report on the company's new installation in Houma, Louisiana was presented by C. R. Cross, Houston division manager. Plans for further expansion in the Gulf Coast area were decided upon and will be announced at a later date.

Birnie displayed floor plans for BJ's new Arlington, Texas general office and laboratory building. He revealed that the structure will be completed by the end of this year. The new facility will be headquqarters for BJ's sales, training, credit and exporting departments, in addition to housing the company's research and development laboratory.

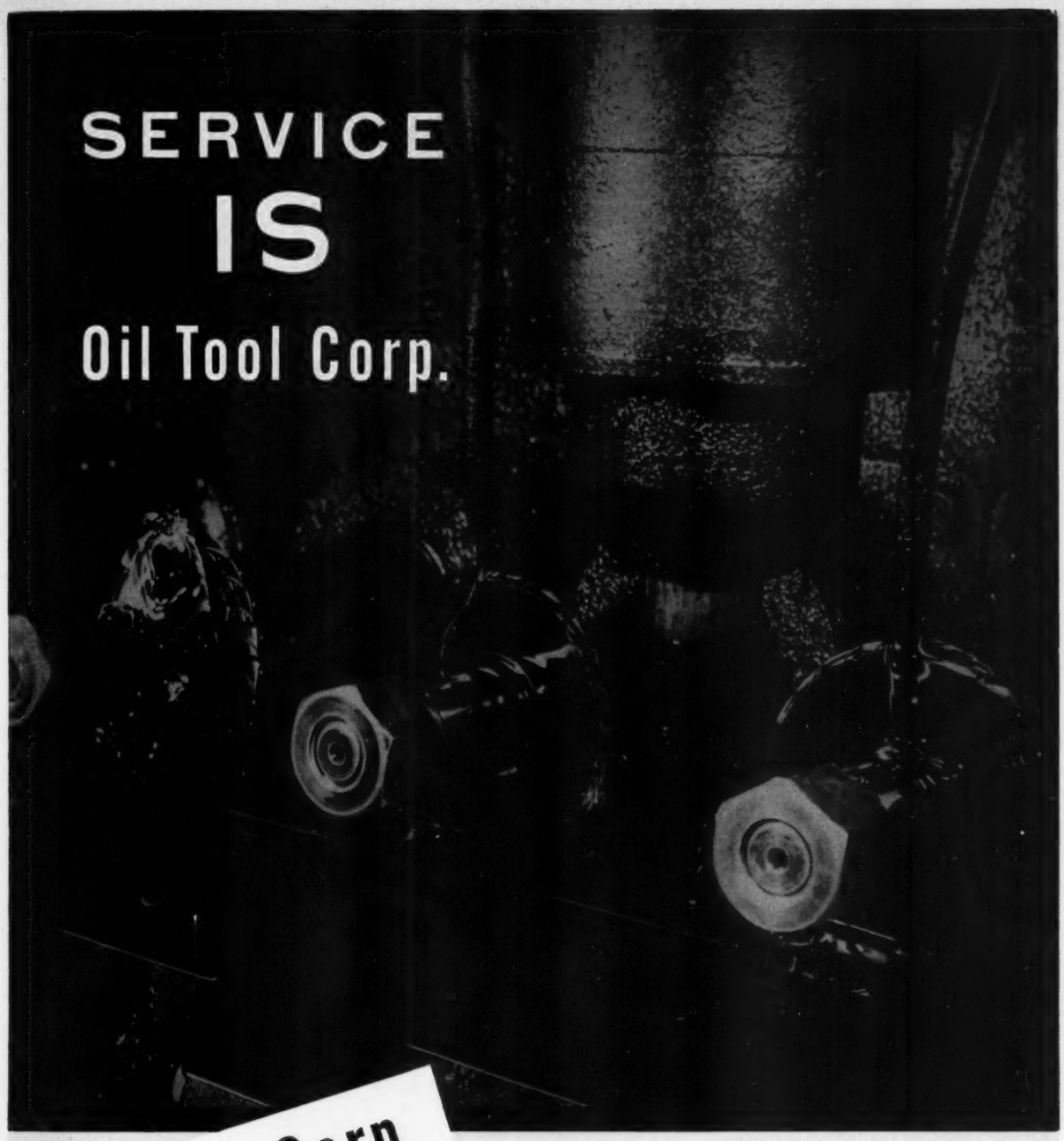
J. V. Derrick, newly appointed export sales manager, outlined steps that are being taken to expand the scope of BJ's activities overseas.

BJ Service, Inc., a member of the diversified Borg-Warner group, serves drilling and production segments of the oil industry in the United States and Canada, and manufactures service equipment for use in foreign fields.

Occidental Petroleum Spuds In First Test Well On Tehama County Farmout

Occidental Petroleum Corporation has spudded in its first test well on its newly-acquired 17,000-acre farmout in Tehama County, Calif.

Designated as Occidental Harris No. 1, the well is situated in the Southeast quarter of Section 23, Township 26 North, Range 5 West, about nine miles southwest of Red Bluff. The drilling site is approximately one mile southwest of the McCulloch-Sunray Stevenson No. 1 well abandoned last January principally because of mechanical trouble. The abandonment occurred despite the logging of excellent oil and gas shows.



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Petroleum LORE and LINGO

By RICHARD SNEDDON

The Lowly Pipeliner

Of all the technicians who lend their talents to the operations of the petroleum industry, pipeliners are by all odds the most inarticulate. This, however, is not because their particular phase of the total picture is lacking in color, romance, or even humor, but is simply the result of being a sort of in-between agency that has no real superficial glamor. The driller can bring in a 200 barrel well in a new area and create more excitement than a political convention; the producer can find a means of increasing the flow from that same well by 50 barrels a day and be hailed as a genius and a great benefactor of mankind; the refiner can perfect a method of recovering more high octane gasoline from a barrel of crude and the trade magazines will practically go into hysterics; but lo the poor pipeliner, he suffers from "stullification of the epiglottis" so when he pushes a record quantity of oil or gas through astonishing mazes of subterranean channels, from the field to the nearest manufacturing center, it causes no more commotion than does a light snow flurry in Northern Alaska!

Of the Arabian Camel

And speaking of contributions to the uplift of society, what could be of greater value than the establishment of artificial, pipeline-fed oases, with inexhaustible water supplies, in the heart of the Saudi-Arabian desert where water is the ultimate arbitrator of life and death, not only for the nomadic natives themselves, but for their principal means of transportation, the camel? By the way, the last issue of Lore & Lingo was given over largely to animals with which the petroleum people came in contact in the course of their world wide peregrinations, and we forgot to mention that loose limbed quadruped which despite its supercilious air and affected dignity, is perhaps the most pliable of all animals. Oil men from the Middle East have told me that with either one of its gangling hind legs, it can scratch its ear, smooth down its chest or massage its hump. Its neck is so supple that it can reach around and nip its own tail; and can even tip back its head until it rests upside down on its flea-bitten hump.

Camel Hoofs & Tires

I remember George Supple, remarking at a meeting of the Western Pipe Liners Club some years ago that as many as 7,000 camels stop at one of these artificial oases in a single day. When they arrive they are as desiccated as dried apples and their sides and humps are caved in until they look like collapsed goat sacks, but by the time they have sated their thirst they have about the same abdominal dimensions as a well nourished hippo. And, in case there is a boy scout in your family, you should know that there are two distinct species of camel, (1) the Arabian variety, a hot country animal, known as the "dromedary" from the Greek **dromas**, "running." Some of the speedier ones can do 100 miles a day, and they have been known to carry a load of 1,000 lbs., not of course at that speed. The hoofs of the dromedary are soft and pliable and they splay out so that they do not sink in the dry, shifty, underfooting. This, indeed, is where Aramco engineers got their idea for the low-pressure, wide-spreading tires that now enable them to use automotive equipment successfully in soft, yielding sand.

The Two Varieties

The Arabian variety has just one hump and is tall, between 8 and 10 feet high not including the neck, but there are many Arabs who can take a running start and leap right into the saddle. It is true that the big animals can go for a couple of weeks without water and almost without food, but they don't carry water in their humps, as I have heard people say. The latter is a reservoir of fat which they draw upon as the occasion demands. This explains why the hump is sometimes thin and flabby and at others is solid and substantial. Water is actually stored in a series of compartmented stomachs.

Bactrian Species

The other species is the Bactrian camel which has two humps and looks very much like a dromedary that has swallowed a western saddle. It takes its name from Bactria in Asia, is somewhat smaller and being a cold weather animal it grows heavy coats of hair as protection against the icy blast. All the Bactrian camels I have ever seen have been in the last stages of disintegration. Their fur has dangled in untidy, semi-detached swatches that recalled the outfit worn by Red Skelton when he plays Freddie the Freeloader. Although they give the appearance of being on the dole, they still affect the titlted head and same superior expression as their Arabian cousins, the dromedaries. They are important beasts of burden in the cold, hilly, rocky areas of Southern Siberia and Mongolia. Being a camel is bad enough, but being a camel in that sort of environment is infinitely worse.

Early History

But now, let us get back to the pipeline proper which has in reality been one of the important developments of the petroleum industry. When transportation first became necessary to get the oil from the vicinity of Oil Creek in Pennsylvania to market, it was hauled by horse drawn wagons in containers of every conceivable variety. There were thousands of these vehicles at one time and they whipped the roads into such a quagmire that progress was not only slow but decidedly unpleasant. Nonetheless, when the first pipeline was laid, the teamsters screamed to high heaven, tore up the pipe, and threat-

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ened dire consequences to the owners if they reconstructed it. Nonetheless it was rebuilt, and so were many others until today according to the American Petroleum Institute, there are in the United States 145,000 miles of cude lines and 35,000 miles of product lines. The former are the ones that carry crude from the field to the refinery for processing and the latter are used to carry finished products back from the refinery for distribution to the consumers. This, of course, takes no cognizance of the thousands of miles of large gas mains (30" to 36" in diameter) with their multitudinous feeder lines and their equally multitudinous distribution lines which bring comfort and convenience to millions of homes in all parts of the country.

Recent Changes

In recent years, the entire pipelining system has undergone tremendous changes. Substantially, in the beginning, however, the well effluent, was first passed through separators to segregate the gas and oil. The oil was then flowed or pumped to so-called "run-down" or receiving tanks. Each well had at least two of these tanks of requisite size so that when one was full, the stream could be turned into another. Meantime the first one was measured and tested by the gauger, to determine its quantity and API gravity. If wet, that is, if it contained more than 3% of water, it was next either dehydrated on the spot or was pumped though a wet oil line to a central dehydrator station. Dry oil, whether produced at the well or after the dewatering treatment was pumped to the nearest tank farm to be stored according to its quality and ultimately sent on its way to the refinery, where another gauger measured and tested it again and saw that it was put in the right container.

Enter the Engineer

There was considerable distance and the refinery, as a rule between the producing area and the refinery and sometimes the pipeline had to be laid over sizable inclines and declines. It, thus, became the job of transportation engineers to determine where pump stations should be located and what power they would need to give the oil enough push to carry it on the next leg of its journey. At first the distances between stations were short because little was known of viscosity effects and the frictions encountered, and because pumping equipment was not nearly so efficient as it is now. Pipe lines were equipped with threaded joints and in the process of laying, they were screwed together by gangs of tong men who cinched them up tight by pure physical strength. The joints were coated to prevent leaks, but when the pumps began to build up pressure, weaknesses began to show, and leaks of widely varied dimension from pinholes to outright severance at the joint were much more common than they are today.

Line Walkers

Every district had its pipeline gang ready to dash out at a minute's notice to patch up such leaks, and a long suffering chap known as a line walker to traverse the line at regular intervals and watch out for the tell-tale spills. In his more lush years the line walker was provided with a horse and buggy and certain implements with which under the proper circumstances he could make temporary repairs to hold the line loss at a minimum until the pipeline gang arrived. Among these implements were a pick and shovel to dig what the pipeliner called "a bell hole." This was just an excavation at the point of the leak, exposing the entire circumference of the pipe. Another of the implements was a device known as a "saddle." This was clamped over the leak and screwed tight in place to stop the escape of oil or gas as much as possible.

A Tough Assignment

The story is told of one chap who was promoted from the gang to a line walking job and was pretty tickled over his good fortune. It didn't take him long to change his mind, however, when he started to work, if one may judge by the work report he submitted to his boss at the end of his first twenty-four hours of endeavor. It was somewhat as follows:

Number of bellholes dug	9
Number of pinholes plugged	4
Number of saddles attached	5
Number of miles walked	24
Number of feet aching	2
Number of days I will continue in this job	0

By the way, the inclusion of pinhole leaks reminds me that a man working on a high pressure gasoline line once put his hand under the pipe to find the exact location of a pinhole leak. He found it all right —it drilled a hole right through the palm of his hand.

The Line Flyer

In due time, the line walker's buggy was replaced by a pickup truck and still later by a small plane. Now in his plane he covers hundreds of miles in a day and when he sights a leak, he simply flies over it again and drops a sack of contrasting powder so that the place can be easily found by the repair crew. It might be noted that the pipeliners get help in this connection from some quite unexpected quarters. Natural gas as first received into the gathering lines sometimes has a rather high content of organic sulphur, particularly in the form of mercaptans which take their name from the Latin phrase mercurium captans meaning "mercury seizing" because they have a strong tendency to combine with mercury. Like most organic sulphur compounds these mercaptans have an odor that is violently offensive to human olefactory organs. It is attar of roses to other flesh eating animals. Mostly they like their meat high and sulphur has the attractive aroma of putrefaction. Leaks in the lines carrying these commodities are commonly revealed by hovering buzzards and howling coyotes which haunt the area, believing that the effluvium emanates from something dead, something that would make a tasty meal. Take a sniff at some of the organic sulphur compounds if the opportunity presents and you will understand why they are so readily detected by buzzards and coyotes. You will never understand, however, how the carnivores ever came to develop a taste for that sort of stuff.

The Snifter

Gas line leaks normally are a little more difficult to detect than oil

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leaks but an excellent aid has been developed in this department. It might be properly designated as a mechanical nose or snifter and it checks the line in a unique but altogether adequate way. The device is simply a tractor with a plow blade in front, in the nose of which is a suction pipe. The tractor covers the route of the gas line; the blade digs down a few inches into the earth as it goes along; and the suction nose carries any gas that may be encountered back to an explosimeter in the driver's cab. The explosimeter is sensitive to very low concentrations of hydrocarbon gases and thus even discovers the smallest leak. As a matter of fact, this artificial proboscis is much more reliable for the detection of gas than is the human type smeller and its sensitivity is never reduced by hay fever.

Romance Continued

While we are dealing with the romantic aspects of pipelining, I recall that during my own association with the poise and dyne brigade, we used to have an annual whing ding at which one of the highlights was a vaudeville show (or so we thought). For this I once composed a tragic poem, entitled "Ballad of Brea." It was delivered with great histrionic ability by one of the pipeline actors and went somewhat as follows: "Pauline, the cutest chick in Brea town, when this thing happened forty years ago, had turned all other applications down, to love an oil man by the name of Joe. A watchman faithful to his daily beat, Joe never once had failed to punch his clock. Nor, 'spite the bunions on his aching feet had ever failed to make his hourly walk. As time went on their love grew more and more, and every afternoon as sure as fate, just as the station whistle tooted four, they'd meet on schedule at the tank farm gate. And arm in arm they'd stroll along the way, laughing and chatting as young lovers will of future plans, and of their wedding day, and of a cottage on the side of Stearns Hill.

The Villain

"The Stewart pumper, who was known as Steve watched this affair with fiercely jealous eye, and bitterly he cursed into his sleeve each time he saw the happy pair go by. His fury grew with every passing hour, and ultimately goaded by his hate, one night when he was working graveyard tour, he planned for them a nasty sticky fate. The scoundrel in his way loved Pauline too but his advances merely made her sore for though he knew his pumps as few men do, his etiquette was rotten to the core. His soul was rasped by every fresh rebuff, until at last he swore an oath. Said he, 'I guess she thinks that I'm not good enough, I'll show the vixin she can't toy with me.' And not long after, this big so and so got on the phone and called up poor Pauline, and altering his voice to sound like Joe, asked her to haste to Reservoir 18. Intending when he had her there alone, to force the love he'd tried in vain to win. But Steve forgot he'd used the Company phone and every engineer was listening in.

The Plot

"As soon as Steve's voice sounded on the air, the dehydrator man at Naranjal had seen the purpose of the wicked snare and sensed at once it was a phony call. He saw that he must act without delay in order to prevent a grievous wrong, so rang up Joe and told him right away he'd better load his gun and come along. Joe rushed out quickly in the cool night breeze and filled his Austin tank with gasoline, then jumping in he drove with trembling knees at breakneck speed to Reservoir 18. As he drew near he heard a piercing scream that almost tore the atmosphere apart. Then in the circle of his headlight's gleam he saw a sight that nearly stopped his heart. The villain, Steve, had planned his work full well, and now he struggled with the fair Pauline, who kicked and fought the while this fiend of hell dragged her to his waiting limousine.

Grand Finale

"No time to lose: Joe drew a bead and fired, and Steve went down, hit square between the ears. Pauline, poor thing, when all this had transpired, just clung to Joe and bathed his chest with tears. Thus honest love had triumphed once again, right there beside the Stewart Tankfarm gate, and thus one of the wickedest of men met with a fearsome but deserving fate. Pauline and Joe were married right away and moved into their dreamhouse on the Hill, for which their payments to the F.H.A. are high and so they're having trouble still." This whole chapter up to this point has been a kind of pipeline vacation, a holiday from education, if you please. It has been much too hot in recent days to dwell on serious matters so in order to make it easy on the perspiring reader, I have skipped about the lunatic fringe of the business for which I hope in due time I may be forgiven.

And So On

Meanwhile perhaps there are those who have never heard that pathetic piece of iambic telrameter, or something, that trips along thusly:

"Sadly I asked, 'For whom this grave in the very heart of town?'
'For nobody, sir,' the digger replied,
'We're laying a pipeline down!'"

In a future issue I hope to detail the exciting process by which pipeline procedures evolved from a liberally peopled activity into what is practically a machine. Where once the system of measurement, testing, storage and transportation was carried on by an army of engineers, gaugers, and pumpers, now it is about as close to being completely automatic as any phase of the petroleum business. Quantity and quality, rate of transport, manipulation of valves, stopping and starting of pumps and an infinite assortment of pipeline functions can now be performed automatically and by remote control. How it all came about is an interesting story that will keep until the atmospheric temperature drops a bit and a man can think without perspiring like a puddler in a pig iron works.

A new chemical additive for water to **permanently** de-activate the swelling of Bentonitic shales and clays. **D.A.B.** controls and limits the amount of water associated with clay swelling. Compatible with all acids and surfactants for the following uses:

1. Oil Well Stimulation and well washing.
2. **Inorganic or organic acid jobs.**
3. Wash — to remove swollen clays — to release water block.
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5. Completion fluid in conjunction with clay base or oil emulsion muds:
6. **Ordinary clay base drilling mud.**
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8. **Advance water flood procedure.**
9. Cementing, etc. — whenever it is desired that filtration or encrcachment of water will not have a harmful effect on Bentonitic shales or clays.

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Latin America Refining To Increase 50% in 10 Yrs., UOP Predicts

Oil refining in Latin America will increase more than 50 per cent within 10 years, Unversal Oil Products Company predicts.

E. W. Schnabel, sales and licensing coordinator for the Latin American area, in a paper co-authored with S. W. Curry, manager of UOP's market research and economics department, said the company's studies, based on past trends, also forecast construction of about 17 new Latin American refineries in that time.

Schnabel addressed a joint meeting of American Institute of Chemical Engineers and Instituto Mexicano de Inginieros Quimicos in Mexico City recently.

Oil expansion will be stimulated by rising living standards and increased population in Central and South America and the Caribbean, he said. Also spurring growth will be expansion of petrochemicals south of the border, he said.

Changing Consumption Pattern

Pointing out that oil demand in Latin America has averaged an 8.6 per cent yearly increase in 1949-59 —roughly twice the U. S. rate—Mr. Schnabel predicted Latin American consumption will hit 4.3 million barrels daily by 1970. Export of refined products by Latin America will add another 1.1 million barrels per day, he said.

Current oil use in Latin America is about 1.7 million barrels daily, with about 1.1 million barrels more exported. The 73 existing refineries will add about 25 per cent to their size, Mr. Schnabel predicted, and about 17 more will be built, bringing the 1970 total to 90. Consumption ratios of various products will continue to differ from that of the U. S., he commented, but the pattern will change markedly.

Rising proportions of oil will be consumed in the form of gasoline, kerosene and distillate fuels, according to the UOP forecast. Residual fuel demand, in terms of total requirements, will decline. Lubricating oil consumption will remain at a rather constant percentage of total oil demand.

Petrochemicals to Raise Living Standards

Motor fuel will rise sharply in octane rating, Mr. Schnabel said, with premium fuel showing a greater gain than regular. Both regular and premium grades, however, will show increases as the number of motor vehicles grows from the 3.4 million in Latin America in 1956 to 9.5 million in 1970.

"Development of a large scale petrochemical industry has significance in Latin America, not only as an economic use for available raw materials, but in stimulating industrial growth in general," he said. "The petrochemical industry developed in the United States because requirements for some consumer products became so high they could no longer be satisfied through former sources. Similar expansion in Latin America can do much toward raising the living standards of its people."

Texaco Reorganizes Research And Technical Department

The Research and Technical Department of Texaco Inc. has been reorganized effective July 1 to keep pace with the Company's current and future expansion, it was announced by L. C. Kemp, Jr., vice president in charge of the department.

Texaco's expenditures on research and technical activities have increased substantially during the past 10 years, and this year will total nearly $23 million, Mr. Kemp said.

"These expenditures are expected to grow as the Company expands, and the present reorganization will provide our Research and Technical Department with the flexibility such growth will require," he stated.

Under Mr. Kemp and Dr. W. E. Kuhn, general manager, the department, as a result of the reorganization, will establish five areas of responsibility. Managers announced to head these will be-

Planning and information, Dr. W. J. Coppoc

Commercial Development — Products, Patrick J. Keating, Jr.

Commercial Development — Processes, John K. McKinley

Technical Services, W. A. McMillan

Administrative Services, Dr. Richard L. Sawyer

The Texaco Research Laboratory at Montebello, California, will be headed by duBois Eastman, director, who will also be responsible to the general manager.

Baker Oil Tools, Inc. Expands Research

Baker Oil Tools, Inc. has transferred its Research headquarters to Houston from Los Angeles and plans a major expansion in research and testing facilities in the Texas city, T. Sutter, President, has announced.

H. H. Fisher has been named Chief Research Engineer succeeding J. R. Baker who has been re-assigned as manager of the company's new Mexican subsidiary, Baker-Herramientas Petroleras, S. A. Mr. Fisher previously was chief product engineer in Houston. J. D. Keithahn, former research engineer in Los Angeles, has been named Chief Product Engineer in Houston. J. F. Muse continues as Chief Product Engineer in Los Angeles.

The company's increased emphasis on research and the development of new products is clearly indicated not only by the establishment of the research department activity in Houston, but by expansion of Houston's product engineering department and the contemplated major improvement in research and testing facilities at both Los Angeles and Houston. These facilities will include test cells for testing tools under the extremely high pressures and temperatures encountered in deep wells, as well as a cased dry hole with derrick and draw works which in conjunction with other special equipment will make it possible to test and manipulate tools under actual down-hole conditions.

New Wyoming-Montana Pipe Line

Husky Pipeline Company, Cody, Wyoming, a subsidiary of Husky Oil Company, has awarded a contract for the construction of a 96-mile petroleum products pipeline from Cody, Wyoming, to Billings, Montana, to W. E. Claycomb & Son Construction Company, Cody, it was announced recently.

Continental Pipe Line Company, Ponca City, Oklahoma, a subsidiary of Continental Oil Company, will supervise the construction.

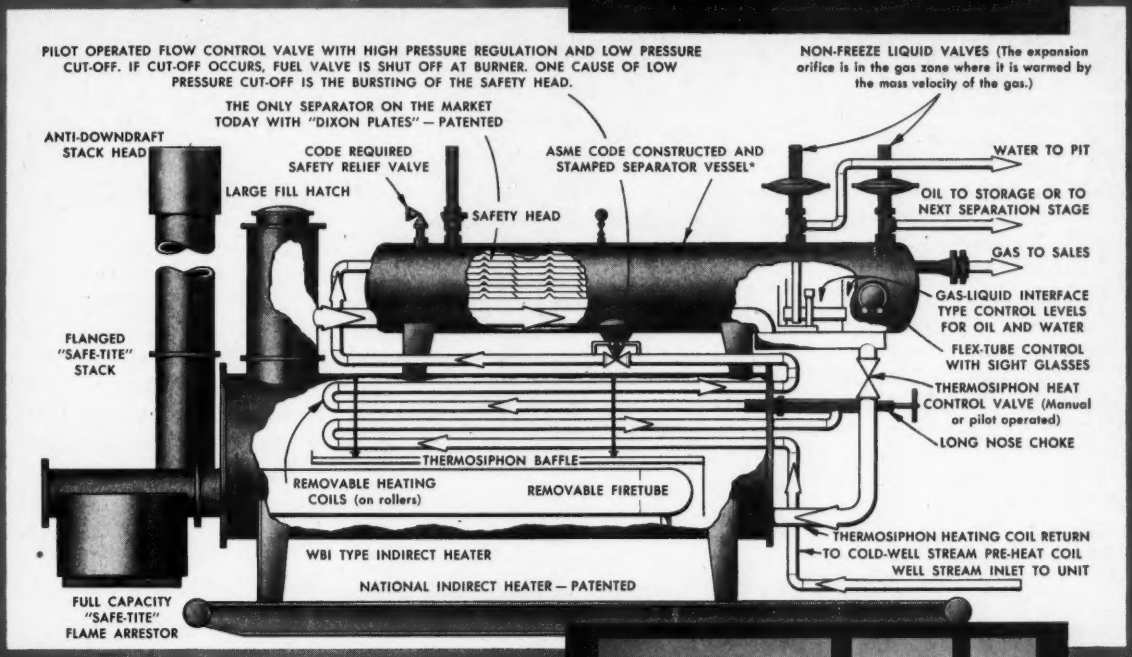
Construction of the line will start in July with completion expected by October 15. The new line will have a pumping station at Husky's Cody refinery and delivery facilities at Billings where it will connect with the Yellowstone pipeline extending to Spokane, Washington.

National's All New

THERMOSIPHON STAK-PAK

(PATENT PENDING)

GAS CONDENSATE PRODUCTION UNIT


PILOT OPERATED FLOW CONTROL VALVE WITH HIGH PRESSURE REGULATION AND LOW PRESSURE CUT-OFF. IF CUT-OFF OCCURS, FUEL VALVE IS SHUT OFF AT BURNER. ONE CAUSE OF LOW PRESSURE CUT-OFF IS THE BURSTING OF THE SAFETY HEAD.
NON-FREEZE LIQUID VALVES (The expansion orifice is in the gas zone where it is warmed by the mass velocity of the gas.)
THE ONLY SEPARATOR ON THE MARKET TODAY WITH "DIXON PLATES" — PATENTED
ANTI-DOWNDRAFT STACK HEAD
CODE REQUIRED SAFETY RELIEF VALVE
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WATER TO PIT
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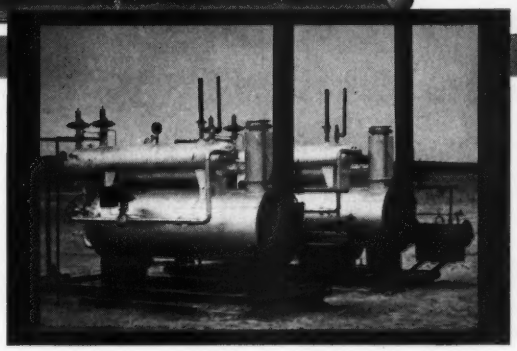
NATIONAL INDIRECT HEATER — PATENTED
FULL CAPACITY "SAFE-TITE" FLAME ARRESTOR



National Thermosiphon Stak-Paks are composed of standard separator and indirect heater units. They are available in combinations of two or three-phase horizontal separators together with any size indirect heater. Completely skid mounted and pre-piped, the ASME code stamped separator is not immersed in the water bath of the heater but is placed above. Glycol protected water bath will not freeze. No housing or insulation needed in moderate climates such as Oklahoma, Kansas and Texas.

The Stak-Pak is available with all controls and valves manufactured by National . . . one supplier — one source . . . non-freeze type liquid valves, FLEX TUBE® liquid level controls, interface level controls, long nose chokes and many others

PLUS National's 'Safe-Tite' Flame Arrestors and safety-drilled return bends in heating coils.

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Petroleum Equipment Suppliers Association Elect Directors

Directors-at-Large and district directors of the Petroleum Equipment Suppliers Association elected at P.E.S.A.'s annual meeting in Banff, Canada, are listed below.

Following are Directors-at-Large for 1960-1961: E. S. Dulin, Byron Jackson Tools, Inc., Los Angeles; J. A. Crawford, The Youngstown Steel Products Company, Los Angeles; Frederick F. Murray, Oil Well Supply Division, United States Steel Corporation, Dallas; A. W. McKinney, The National Supply Company, Pittsburg, Pennsylvania; Ted Sutter, Baker Oil Tools, Inc., Los Angeles; F. M. Mayer, Continental-Emsco Company, Dallas; M. B. Jones, The S. M. Jones Company, Division of Buffalo-Eclipse Corporation, Toledo, Ohio.

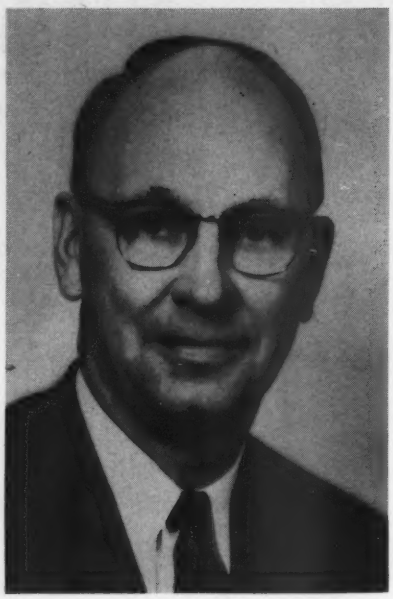
D. D. Bovaird, The Bovaird Supply Company, Tulsa; M. E. Montrose, Hughes Tool Company, Houston; Rainey Elliott, Jones & Laughlin Supply Division, Tulsa; Grover Kilgore, The Halliburton Company, Duncan, Oklahoma; W. T. Powell, Continental-Emsco Company, Dallas and Wallace O. Wilson, Wilson Supply Company, Houston.

Directors for Pacific Coast District, 1960-1961: James Beré, Axelson Manufacturing Company, Division of U. S. Industries, Inc., Los Angeles; H. J. Hagn, Chiksan Company, Brea, California; Harold E. Howard, Howard Supply Company, Los Angeles; Arthur S. Marshall, Smith Tool Company, Compton, California.

I. J. McCullough, McCullough Tool Company, Los Angeles; H. N. Peters, Technical Oil Tool Corporation, Los Angeles; John J. Pike, The Republic Supply Company of California, Los Angeles; Andrew W. Rose, Byron-Jackson Division, Borg-Warner Corporation, Los Angeles; Elvin K. Wilson, Shaffer Tool Works, Brea Calif., and W. A. Wilson of Web Wilson Oil Tools, Inc., Los Angeles.

Wright Elected Vice President

Charles C. Wright, president of Oilwell Research, Inc., Long Beach, California, has been elected vice-chairman of the Western Division, American Council of Independent Laboratories.



J. A. Smith

Texaco's J. A. Smith Named New C.N.G.A. President

The California Natural Gasoline Association has elected J. A. Smith, superintendent of gas and gasoline plants in the Los Angeles Division of Texaco Inc.'s Domestic Producing Department, president for the 1960-61 year. Smith accepted the gavel at a meeting of the Association's Board of Directors on July 19 from K. C. Vaughan, Union Oil Company of California, the retiring president. R. O. Boykin, manager of gasoline plants and assistant to the vice president, production, Monterey Oil Company, took office as vice president.

Newly elected to the Board of Directors for a two year term were: E. H. Fisher, Pacific Gas & Electric Company; John R. Fraser, Union Oil Co. of California; Warren F. Kane, Clark Bros. Co.; J. A. Millen, Southern Counties Gas Company; L. S. Osborne, Union Pacific Railroad Company, and L. L. Palmer, Chanslor-Western Oil & Development Company.

E. R. Millett, Jr. was reappointed secretary-treasurer of the Association.

After attending the University of Colorado, Smith joined Texaco in 1926 in its Long Beach producing offices. He later served as Field Inspector and Field Foreman at Long Beach and as Foreman of Texaco's natural gasoline plants at Santa Fe Springs and Montebello. He was appointed Assistant to the Superintendent of the Company's gas and gasoline plants in 1938 and was promoted to his present position in January 1958.

D & D of L. B. Meet

Fritz Huntsinger, president of the Ventura Tool Company, by popular demand was again the guest speaker when the Long Beach Desk and Derrick Club held their regular monthly dinner meeting, July 20. The meeting was held in the lovely Disneyland Hotel Gourmet Restaurant in Anaheim.

Huntsinger spoke on "Alaska Future Oil Development and New Oil Discoveries in Western Europe." Along with his talk, he showed colored films of the Glaciers in Alaska.

International Guests Entertained at Nomads Whing Ding

Following the precept of the Nomads, the Los Angeles Chapter invited all oil men from foreign fields currently in the Southern California Area to its 21st Annual Whing Ding at the Lakewood Country Club on July 15th and over two hundred and fifty Nomads and guests were present for the Golf Tournament, banquet and floor show which covered the activities from early morning to late at night.

The Golf Tournament

The Golf Tournament, under the able guidance of the Golf Committee headed by Chili Sutton of Oil Well Mfg. Company and consisting of Shorty Bowen of Martin-Decker Corporation, Bill Goertz of Monarch Engineering Company, Glen Horrie of Geotex Corporation and Bob Thompson of Servco Corporation, started off at eight in the morning with 97 players lined up during the day to tee off.

1st Low Net:

Guest, Don Oakes of his own company.

Nomad, John Cochran of Driltrol.

2nd Low Net:

Guests, of which four tied and divided four prizes—Hap Carroway of Reed Roller Bit Co., Don Cragges of Union Oil Co.,

WHING DING DOOR PRIZE WINNERS: Holders of the lucky numbers at the 21st Annual Whing Ding of the Los Angeles Chapter of Nomads held at the Lakewood Country Club, July 15, 1960. Standing, left to right, are Hal Coops of Desert Valley Camera; K. S. Ramey of Axelson Mfg. Company; Bill Brannon of Technical Oil Tool Company; Gene Maxwell of Baash-Ross Tool Company; Joe Douglass of Gardner-Denver Company; Bill Sauer of Long Beach Oil Development; Tom Cook of Richfield Oil Company; (front row) Cornelius Vos of Shell B.P.M.; H. A. Van Schelt of Shell B.P.M.; Al Dunn of Long Beach Oil Development; Ann Mills, drawer of lucky number; C. F. Van Loozen of Gardner-Denver Company; G. J. (Frenchy) Jure of Camdrill International; C. M. Williams recently from Lybia.

WHING DING GOLF PRIZE WINNERS: Golf Tournament winners at the 21st Annual Whing Ding of the Los Angeles Chapter of Nomads, Lakewood Country Club, July 15, 1960. Left to right (back row) John Cochran of Driltrol; Enrique Domingues from Venezuela; Don Oakes of Oakes Company; Frank Smith of B J Service; Dan Berry of Ford Alexander; Gene Madsen of Smith Tool Company; Hap Carroway of Reed Roller Bit Company; (front row) George Matter of Hillman-Kelley; Waldo Moore of Cavins Company (accepting for Don Cragges of Union Oil Co.); Truman Beeson of Specialty Sales Company; Herb Klepfer of Baash-Ross Tool Company.

(Waldo Moore of Cavins Co. accepting for him), Dan Berry of Ford Alexander, and Frank Smith of B J Service.

Nomad, Dutch Matter of Hillman-Kelley.

3rd Low Net:

Nomad, Gene Madsen of Smith Tool Co.

Low Gross:

Guest, Don Oakes.

Nomad, Lefty Beeson of Specialty Sales Co.

High Gross:

Guest, Enrique Domingues from Venezuela.

Nomad, Herb Klepfer of Baash-Ross Tool Co.

Due to illness of his wife, Paul Bowen was unable to come down from Moro Bay to play a match with Lefty Beeson for the Old President's Trophy which was accordingly awarded to Lefty by the Chapter President, Taylor Bannerman of Technical Oil Tool Corp. A new President's Trophy to be won by a Nomad shooting low gross score for three consecutive years in order to gain permanent possession was also awarded for the first year to Lefty Beeson by the President.

The Social Hour, Prize Awards and Floor Show

During the afternoon Nomads and guests gathered to play cards and renew friendships. At five o'clock a singing accordionist appeared on the scene and the barber shop boys limbered up until and during dinner.

Jack Smith, of Byron Jackson Tools, program chairman, had been laid up with the gout but was present. He was unable to carry on as Master of Ceremonies, however, and his job was taken over by Lew Bronzan of McCullough Tool Company who first introduced the President of the Chapter, Taylor Bannerman, to welcome the Nomads and guests.

After awarding of the golf prizes with the aid of Onos Lindsay of Eastman Oil Well Survey Co., Lew Bronzan had the accordionist draw numbers for the door prizes. The winners and their prizes were as follows:

G. J. (Frenchy) Jure of Camdril International from Libya, an electric broiler; Tom Cook of Richfield Oil Co., a poultry shears; Bill Brannon of Technical Oil Tool Co., a habachi; Bill Sauer of Long Beach Oil Development, set of glasses; Hal Coops from Apple Valley, six-piece knife set; C. Van Loozen of Gardner-Denver Co., an ice bucket; K. S. Ramey of Axelson Mfg. Co., a carving tray; H. A. Van Schelt of Shell, B.P.M., nine golf balls; Gene Maxwell of Baash-Ross Tool Co., a habachi; C. M. Williams recently from Libya, set of glasses; Joe Douglass of Gardner-Denver Co., six-piece knife set; Corneilus Vos of Shell, B.P.M., an ice bucket, and Al Dunn of Long Beach Oil Development, an RCA Radio.

Lew Bronzan then introduced the master of ceremonies for the floor show which was enthusiastically received by all. In addition to talented cycling, singing, black-out adagio and "exotic" dancing, and ledgerdemain, audience participation added greatly to the comedy.

At the close, Lew Bronzan paid tribute to Jack Smith for his work in organizing and arranging the details of the Whing Ding.

PRESIDENT'S CUP AWARD—Truman A. Beeson of Specialty Sales Company (right) shown receiving the President's Trophy from Taylor Bannerman, Chapter President, of Technical Oil Tool Company at the 21st Annual Whing Ding of the Los Angeles Chapter of Nomads, Lakewood Country Club, July 15, 1960.

here is a cementing problem

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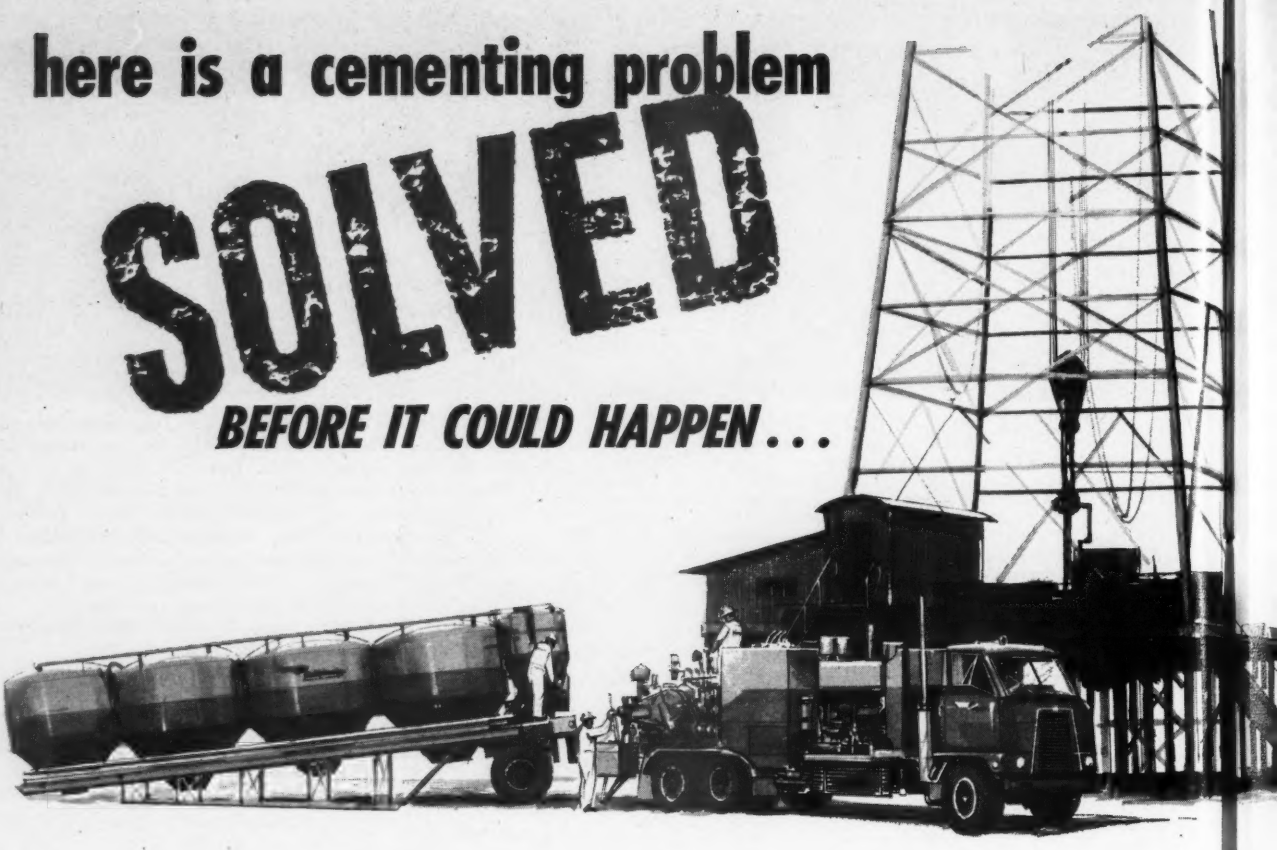
BEFORE IT COULD HAPPEN...



Imagine this well is yours. You're skeptical because of this formation's history... drilling returns, core samples – everything points to probable trouble... severe lost circulation during cementing. That's your problem – and here's how you handle it:

FIRST call in your Halliburton man to help select the best combination of materials and equipment you will need for the job.

The Halliburton man explains how GILSONITE is designed to lighten slurry density to help protect those weak formations from the hydrostatic head of the cement... *and* he points out the excellent bridging characteristics of GILSONITE which will help control any breakthrough that might occur. You then select GILSONITE to help control the circulation losses you expect.

NEXT you pick the right equipment – Halliburton Bulk Handling Equipment to provide up to 1,250 cu. ft. of cement from each unit – at speeds up to 40 sacks per minute without bothersome sack handling, spillage, or breakage. For smooth, dependable placement of the slurry, you choose Halliburton HT-400 Pump Trucks – giving you the capability to do the job *well*, and plenty of power in reserve.

SO YOU'VE SOLVED TODAY'S PROBLEM

but what about tomorrow... and the day after that... here's the answer...

DEPEND ON HALLIBURTON SPECIAL CEMENTS AND ADDITIVES IN ANY APPLICATION INTENDED FOR THEIR USE

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LATEX CEMENT – excellent for use in cementing through permeable zones. The low fluid loss qualities of Latex Cement help limit the amount of cement filterate entering into the producing strata.

POZMIX CEMENT – to provide maximum protection against corrosion, contamination and poor bonding between pipe and formation. For average depths and temperatures, Pozmix "A" and "S" provide superior qualities such as light weight slurries, low permeability and improved pumpability. Deeper, hotter wells call for Pozmix 140 which gives strength stability in well temperatures up to 400° F.

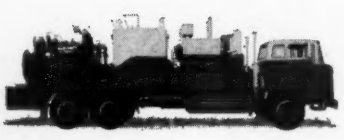
GEL-CEMENT – Halliburton HOWCOGEL helps lower fill-up costs by increasing slurry volume through the water absorption qualities of this material. This also lowers slurry weight to help protect weak formations from the load of a heavier cement column.

RADIOACTIVE CEMENT – provides you with the important ability to survey the condition of the job after completion. Accurate measure of the top of cement, location and disposition of squeeze cement, general condition of cement around specific zones, and other valuable knowledge.

RESIN-CEMENT – is widely used to help control production of unwanted water or gas. A mixture of resins, water and portland cement, this product helps seal off troublesome formation intervals by forming an impermeable bond in the zone adjacent to the plug in the well bore.

Continue to look to Halliburton for leadership

The dependability of these Halliburton products is matched by the experienced performance of the Halliburton specialists who help you use them. Ask your Halliburton Representative to recommend the *best* combination of men, materials and equipment to handle your next cementing job.



HALLIBURTON

CEMENTING SERVICES

HALLIBURTON COMPANY • DUNCAN, OKLAHOMA

Personalities IN THE NEWS

Raymond McGranahan

Gulf Appoints Raymond McGranahan President Wilshire Oil Company in California

Gulf Oil Corporation has announced the appointment of **Raymond D. McGranahan** as President of Wilshire Oil Company of Los Angeles, an independent marketer and refiner recently acquired by Gulf.

Edwin G. Coopman, formerly President of Wilshire, will continue to be a Board Member of the West Coast firm, and he will also work with the company in an advisory capacity.

McGranahan, formerly Administrative Vice President and Co-ordinator-Transportation for Gulf, has resigned his previous post to direct the Californian firm through which Gulf plans to participate for the first time in the fast growing market for petroleum products on the Pacific Coast.

McGranahan's service with Gulf has included experience in every phase of the oil industry. He has been on committees which have dealt with specific reorganizations in marketing and production. And he has served as Chairman of the Administration Committee of Gulf which consists of a coordinator for each of the Company's major departments.

Mills Joins Citizens National Bank

Jack R. Mills has joined the Oil and Gas Division of Citizens National Bank, Los Angeles. For the past nine years, Mills was contract attorney and landman for Sunray Mid-Continent Oil Co.

Jack R. Mills

Neil Miller Now Treasurer Of Dowell Division of The Dow Chemical Company

Announcement has been made of the appointment of **Neil Miller** to be treasurer of Dowell Division of The Dow Chemical Company. He replaces the late **Charles Penhaligen** of Midland, Michigan.

Miller, a native of Hart, Michigan, and a graduate of the University of Michigan, joined Dowell at Midland as an accountant in 1936. In 1945 he was transferred to the company's general offices in Tulsa as assistant secretary and assistant treasurer.

Miller serves as director and treasurer of Dowell of Canada, Ltd., and of the company's divisions operating in Venezuela, Argentina and Germany. He is also treasurer of Dow Industrial Service Division of The Dow Chemical Company.

T. R. Harrison has succeeded Miller as assistant treasurer.

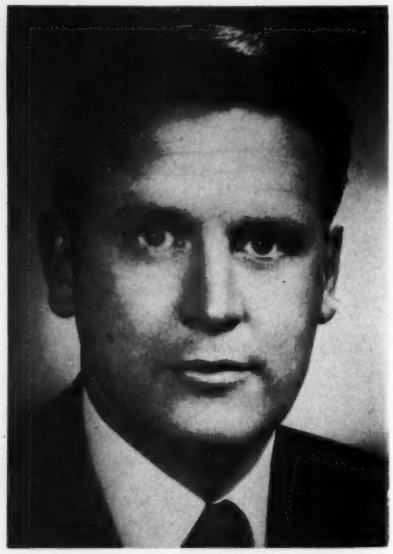
Shell Oil Names Dennie Assistant to the Vice President

Powell A. Dennie has been named assistant to the vice president of Shell Oil Company's Pacific Coast Exploration and Production Area, it was announced recently by Vice President **S. F. Bowlby.**

He replaces **J. T. Doyle** who has been transferred to the company's head office gas department in New York.

Dennie was formerly manager of Shell's production division headquartered in Roswell, New Mexico.

He joined Shell as an engineer trainee in Tulsa more than 20 years ago.



Powell A. Dennie

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Photo courtesy of Atlas Processing Company

Increasing the aromatic content of motor fuel is the good old-fashioned way to raise its octane number. But aromatics have certain characteristics which limit the concentration you should use in motor fuel. If you want to go further ... produce the *best quality motor fuel* ... your next move is to convert your pentane and hexane fractions to isoparaffins with Penex.

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This practical, economical process upgrades your poorest quality blending components, normal pentanes and hexanes ... gives you the isoparaffins you need. A technical bulletin on Penex is yours for the asking. Write for it today.

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WHERE RESEARCH TODAY MEANS PROGRESS TOMORROW

Appointments by U. S. Steel

The appointments of U. S. Steel's Oil Well Supply Division field representatives at Ventura and Coalinga, California, were announced by **D. S. Grubbs,** California Area manager of the division.

Harold E. Throop will be located at Ventura, with **Donald E. Mosher** going to Coalinga.

Throop was employed by Oilwell in September, 1948 at Bakersfield, California, and was transferred to Coalinga in April, 1954. A native of Ontario, California, he served in the U.S. Army from October, 1942 until February, 1946.

Mosher entered the employ of the division in September. 1954 at Bakersfield, where he was located prior to the present appointment. He is a native of Fellows, California.

Hydril Adds Carnahan

Hydril Company announces the addition of **David A. Carnahan** to its California sales force, where his thorough knowledge and understanding of drilling producing operations will prove invaluable to Hydril customers.

A registered mechanical engineer, Carnahan is widely experienced and well known in the oil industry, having held sales and management positions with prominent Western manufacturers. For two years he was V.P. and chief engineer for an international drilling contracting firm.

Standard Oil Co. of Calif. Names Superintendents

Four division land superintendents have been named by Standard Oil Company of California, Western Operations, Inc.'s land department to head field activities of the department. They are: **D. C. Gaylord,** Northern California Division, with headquarters at Oildale; **J. T. Conway,** Southern California Division, La Habra; **R. B. Shulte,** Pacific Northwest Division, Seattle; and **R. W. Armstrong,** Great Basin Superintendent, Salt Lake City.

The appointments follow consolidation of the company's real estate and right of way department, land division of the exploration department and contracts division of the producing department into a single Land Department.

Jorgensen Makes New Appointments

Harry R. Christiansen has been named district manager and manager of sales for Baker Tube Co., a division of Earle M. Jorgensen Co., steel and aluminum distributors. Concurrently, **Howard C. Dehm** has been appointed assistant Los Angeles district manager of the Jogensen Co., filling the position held by Christiansen for the past six years. Announcement of the moves was made by **Earle Jorgensen,** president.

Christiansen joined Jorgensen in 1947 and served in the inside sales

Harry R. Christiansen Howard C. Dehm

department of the company's Oakland plant until 1951. Upon transferring to Los Angeles, he became, in succession, chief clerk of inside sales, assistant manager of sales at the Jorgensen Forge Division, and assistant district manager. In his new position, he will be responsible for sales and operations of the Baker service centers in both Los Angeles and San Francisco.

Dehm was employed by Jorgensen in Los Angeles in 1941 and was soon made chief clerk of inside sales. In 1946, he was promoted to outside salesman and for twelve years covered various territories in the Los Angeles area. Since 1958, Dehm has been in charge of the Jorgensen sales office in San Diego, his native city.

Robert E. Higgins, who has been a Jorgensen sales representative in Los Angeles for eight years, has transferred to San Diego to fill the position vacated by Dehm. Higgins' place on the Los Angeles sales staff has been taken by **Donald F. Dillon,** who came to Jorgensen two years ago, following eleven years experience in other Los Angeles service centers.

Standard Oil Co. of Calif. Makes Appointments

Dr. D. W. Criddle has been appointed Senior Research Chemist, Greases and Industrial Lubricants Section, Richmond Laboratory.

Dr. A. D. Abbott has been appointed Senior Research Chemist in the Petroleum Products Research Section of the Richmond Laboratory.

R. W. Burchell has been appointed to the position of Senior Research Engineer, Engine Lubricants Section, Richmond Laboratory.

I. E. Levine has been elected a vice president of California Research Corporation, in charge of the Chemicals Research Department. He succeeds **J. Q. Cope,** who has transferred to the California Chemical Company.

H. M. Lavender has been named manager, Chemicals Research Division, Richmond Laboratory, replacing I. E. Levine.

J. F. Senger has been appointed manager, Process and Engineering Division, Richmond Laboratory, succeeding H. M. Lavender.

E. B. Chiswell of California Chemical Company has been named to succeed J. F. Senger as Senior Coordinator, Process Design and Engineering, San Francisco Office.

NEW LITERATURE

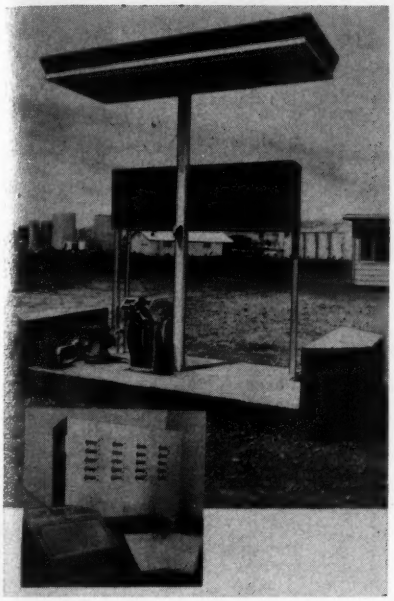
Offers New Side Suction Centrifugal Mud Pump

A new side suction centrifugal mud pump is offered by Gardner-Denver Co. for supercharging slush pumps and for reduction of pump power and end shock loading. The new 4" and 5" BN mud pumps allow slush pumps to be operated at maximum pressures and capacities; resulting in longer life of fluid end parts and pistons.

Type 4" BN delivers 500 gallons per minute with 25 PSI head and 1150 R.P.M., while the 5" BN delivers 750 G.P.M. at the same capacities.

Design features include a high carbon steel shaft: turned, ground and polished to size. The shaft is chrome plated at packing area for longer life. Deep groove (grease lubricated) ball bearings securely locked to the shaft and held rigidly in the bearing housing.

For additional information write for Bulletin BN-1 or contact this publisher.



One of the initial Granco Accounta/Key Systems—Union Oil Co.'s Petaluma Diesel Fueling Station. Here, 24-hour, self-service fueling is recorded up-to-the-minute in the locked, station house.

Granberg Corp. Offers New Accounting System

Granco Accounta/Key System, a self-service loading or fueling system that electrically transmits withdrawal data directly into any type accounting system, has been introduced by Granberg Corporation, subsidiary of American Meter Company.

One of the initial installations of the Granco A/K System was done at the Union Oil Company's Petaluma diesel fueling station. Here, both long-haul and local truckers fuel their equipment at any time of day or night.

The driver simple inserts his key into his assigned slot and turns on the system to load his fuel tanks. The turn of the key starts the pump and the Granco Meter instantly records his personal loading data at two locations: at the fueling site through the visible counter; and electrically to the A/K record panel in the locked station house. Up-to-the-minute customer fueling records are read directly from the panel for billing purposes.

Other A/K Systems are already in their installation phases. One, a self-service bulk plant operation, records loading data from the load rack to a panel in the plant offices. The load-rack key panel permits the tank-driver to load any product stored in the terminal, and withdrawal records, by products, are transmitted to the A/K recording panel in the plant offices.

New Descaler Dissolves Scale Without Corroding Metal

A new safe, easy-to-use descaler, has been announced by Dearborn Chemical Company, Chicago, Illinois. Known as Scale-Cleen, the product is made with sulfamic acid and inhibitors that allow the acid to clean and dissolve scale without corroding or damaging metal. A built-in color indicator shows when the acid has been spent.

According to the manufacturer, the easy-to-store product, which is 95% acid, is recommended for acid cleaning of boilers, air conditioners, heaters, evaporators, heat exchangers, steam generators, diesel cooling systems, dairy equipment, pasteurizers, and automobile radiators.

A dry crystalline material, SCALE-CLEEN cannot splash in handling. A spill is simply shoveled up. There are no irritating fumes, and the product is non-irritating to the skin.

Since SCALE-CLEEN does not give off acid fumes, there is no corrosion of vapor spaces in equipment, even when dosages are weighed and solutions are prepared.

When dissolved in water, the product becomes a strong mineral acid, which incorporates a unique agent that speeds its action.

SCALE-CLEEN is available from leading industrial distributors. For information on your local SCALE-CLEEN distributor, please contact Glen R. Pierce, Manager, Distributor Sales Division, Dearborn Chemical Company, Merchandise Mart Plaza, Chicago 54, Illinois.

Halliburton Lo-Torq Valves Now Available With Flanged-Ends

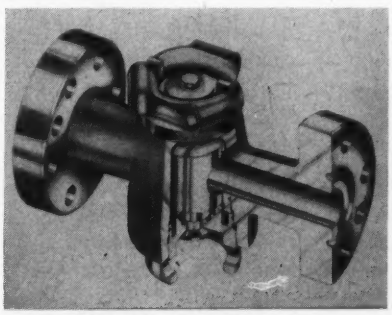
Versatile Lo-Torq Plug Valves designed by Halliburton Company to help fill needs, encountered in performing service work, are now available in a variety of sizes, equipped with flanged-ends in addition to the standard threaded Lo-Torq valves on the market for over a year.

The valve gives dependable performance under field operating conditions and is named after one of its primary features—low torque.

This quick opening valves requires minimum effort of operation and is used in all phases of the oil industry—production, drilling and refining operations, drilling rigs, flow lines, producing and processing equipment, separators, flow line gathering systems, Christmas Trees, casing heads, tubing heads, swabbing and servicing operations.

Proven in field use, the valve is also economical. The initial cost is low and it provides long, low cost operating life with a minimum of maintenance. Unlike mosts other plug valves, the plug and inserts which are subject to the most wear may be easily replaced without removing the valve from the manifold or line. Since there is no necessity for matching parts, the need for returning valves to the factory for repair is eliminated.

For further information, write Halliburton Company, 1709 West 8th St., Los Angeles.



FLANGED-END Lo-Torq Plug Valve is now available from Halliburton Company.

Continental Technical Service Markets Ohio Oil Co. Device

An electro-mechanical "talking brain" is reducing from hours to seconds the time required by a pipe line company for checking readings on flow meters at remotely-located pumping stations.

And it is doing the job much more accurately than human reporters.

Developed by technicians of the Marathon Pipeline Company, a subsidiary of the Ohio Oil Company, Findlay, Ohio, the device does in sixteen to twenty-five seconds a job with less error margin than a man was able to do by driving a round-trip of fourteen miles every two hours for his flowmeter check.

Dispatchers in the company's general office at Findlay simply dial their telephones and ring the device (referred to as a Digital-to-Audio-Translator-Accumulator) which answers automatically. The pumping station identifies itself through a pre-recorded tape attached to a drum which begins to rotate at the telephone signal.

The successive series of revolutions of the drum actuates the proper playback heads, attached electronically to the various contacts of a digital counter, to read out the numbers from the respective tapes attached to the drum. This station identification and digital read out actually is a prerecorded human voice speaking the words and numbers clearly over telephone lines or microwave systems.

The company now has two installations at pumping stations as far away as 400 miles and plans to install more by the end of the year. Within a few years, Marathon expects to have over one hundred in use along its 5,600 miles of wholly-owned and partly-owned pipe lines in eleven states, upon which the company depends for transportation of its crude oil and refined products.

J. H. Rice, president of the Ohio Oil pipe line subsidiary, pointed out that the D-A-T-A device has proved to be the most reliable method yet found to relay pumping station flowmeter readings to the dispatching office. One unit in operation in a station near Alton, Ill., reported the flow of 2,700,000 barrels of oil with only a seven-barrel error over a five-month period.

Mr. Rice pointed out that his company's cost for materials in developing the device was only $540, and that the manufacturer, Continental Technical Service, Inc., of Dayton, O., plans to market them for sale at about $1,300 each. He said that another type electronic reporting device now used by the company, costs about $5,000 per unit, requires frequent maintenance and has a considerably greater margin of error. Chief maintenance of the D-A-T-A unit, Mr. Rice explained, is the periodic replacement of tubes in the associated amplifier which may function for several years.

J. H. Rice, Marathon Pipeline Company President, inspects D.A.T.A. unit designed by one of his communications technicians. Unit, which audibly reads back flowmeter readings over telephone or microwave systems.

The D-A-T-A instrument, ordinarily operated by alternating current electric power, is also equipped with dry cell batteries and an accessary relay in case of power failure.

L. J. Schwartzkopf, company pipe line communications technician, developed the idea for the device after months of hearing pipe line personnel decry the problems of visually reading the flowmeters and the maintenance and unreliability of other types of automatic reporting machines.

D-A-T-A weighs about 26 pounds and can be installed at a pumping station in about two hours. The company can utilize both telephone and microwave communication systems for transmitting.

Continental Technical Service was called in by Ohio Oil and Marathon Pipeline to package and make mechanical refinements to the instrument. The Dayton firm will handle the manufacturing and distribution of the instrument under a royalty agreement with the pipe line company.

Mobile Oil Develops Water Witch

Socony Mobil Oil Company, Inc., is using nuclear radiation to pinpoint where water is getting into oil wells.

The company has developed a new device called a fluid density logging tool which can be lowered into a well to detecct water-producing zones so they can be sealed off with cement. It is particularly useful in wells with multiple producing zones.

The log uses low-energy gamma rays to detect a difference in fluid density opposite the water-producing formation. Water offers more resistance to gamma rays than either oil or gas, which are less dense.

The log resembles an electric eye. As it is lowered, it takes a continuous sample of the bore-hole fluid in the well. It passes this sample between a low-energy gamma ray source such as thulium 170, mercury 203, or europium 155, and a sodium iodide crystal.

The crystal measures variations in gamma ray intensity, just as an electric eye measures variations in the intensity of light from a light source. The variations are transmitted to the surface. Water-producing zones are indicated where the gamma rays are of lowest intensity .The tool is completely transistorized and can be operated from the surface. It has an operating life of 50 hours.

New Two-Zone Pump By Continental-Emsco

A new D+B two-zone subsurface pump featuring an exclusive upper-pump standing valve has been introduced by Continental-Emsco Company. The patented valve, which consists of a drop and seat, gives the multizone pump the same operating efficiency of any standard pump, plus all the operating flexibility required in multiple-zone completions.

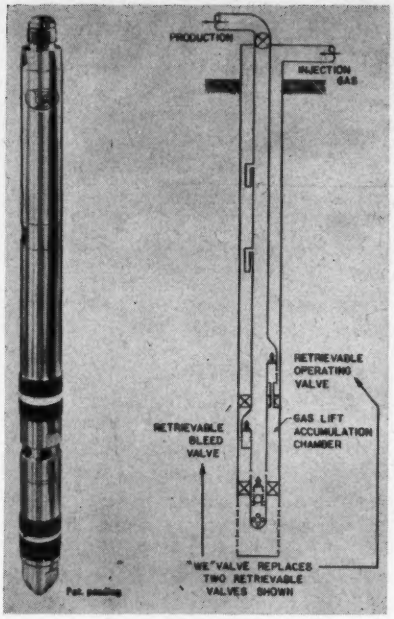
The design of this valve enables the complete pump to be retrievable on the sucker rod string. The valve is attached immediately below the upper-pump barrel, where it provides the closest valve spacing possible for maximum compression on the down stroke. Sealing surfaces are of carbide material to provide maximum resistance against corrosion, sand and fluid cutting.

By standardizing on D+B two-zone pumps, the following operations can be performed with basic two-zone equipment plus a wire line retrievable choke; flow both zones; pump either zone—flow the other; flow one zone—plug the other; do completion and remedial work; and test zones without disturbing tubing string. The design of the pump permits the use of standard D+B pump parts, eliminating the need for special equipment.

Available D+B two-zone pump types are: two packer; one packer with hollow sucker tubes; one packer parallel installations with either two or three tubing strings; triple completions, two or three packer. The two packer and the one packer with hollow sucker rods come in 4½"-7" OD casing sizes, others in 5½"-7".

Two Valves in One

Rapid venting of accumulation chambers in gas lift wells through a half inch vent port and positive regular gas lift valving through its 11/16" main port is now possible with the new Harold Brown Company type "WE" wire line gas lift valve that does two jobs at the same time.



Harold Brown Company type "WE" wire line gas lift valve.

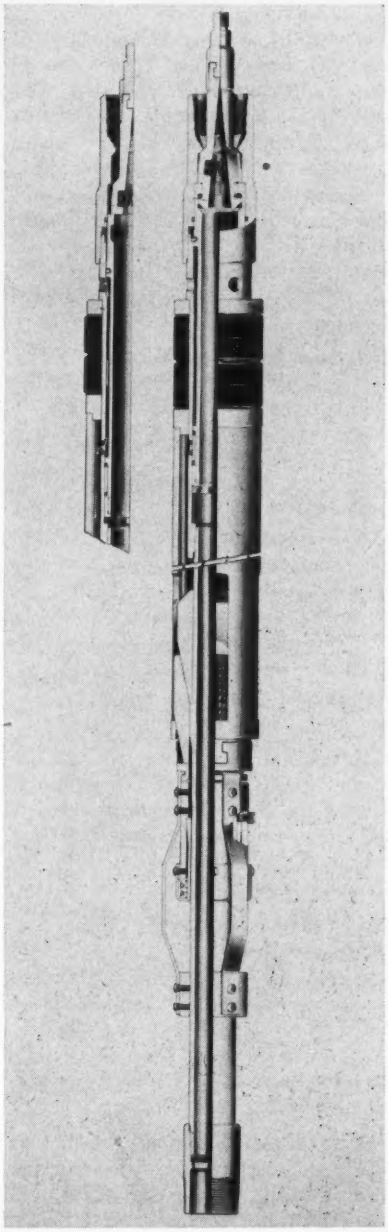
The "WE" valve is two valves in one, doing the work of both the vent valve and the lower gas lift valve in standard accumulation chamber installations, and is especially useful in high GOR wells. The "WE" is used in "MME" side pocket mandrels. To convert existing accumulation chamber installations to the "WE" it is only necessary to retrieve the lower gas lift valve and replace it with the "WE." The existing vent valve does not need to be removed.

Page Oil Tools Offers New Packer

A new circulating packer is now being manufactured by Page Oil Tools, Long Beach, California. "The new tool, the VP Packer, is a hook wall type with a built-in sleeve valve," states designer John Page, company president. "The valve permits circulation of the fluid in the casing annulus when the packer is set."

The valve in the new Page VP Packer is opened and closed with wire line tools. When it is in "Open" position, circulation is made in either direction through the inside of the packer element. The VP Packer can be set by conventional top hole manipulation and by applying a portion of the tubing weight to compress the packing element.

"The VP Packer is readily adaptable to such permanent completion practices as perforating the casing below the tubing string and running a retrievable tubing extension to provide circulation to the bottom," states Page. The Page VP Packer is available in most popular casing and tubing sizes. For additional information and literature, write to Page Oil Tools, Inc., P.O. Box 7097, Long Beach 7, California.



Field Development

Pacific Coast and "4" Corners

LOS ANGELES BASIN

Union Spuds Fifth Test

Union Oil Company's fourth test in the newly discovered Las Cienegas Field drilled to a total depth of 8443 feet and was plugged from 958-649 feet and suspended. Derrick was skidded to a new location and Union-Signal-Pacific Electric No. 5 is drilling below 2000 feet. Three producers in the field are shut in awaiting pipe line connections. Surface locations of all the wells are in the southwest quarter of Section 27-1s-14w near the intersection of Pico Boulevard and La Brea Avenue.

Castaic Junction Completion

Humbile Oil and Refining Co. completed N. L. & F. No. 67 flowing 375 b/d of 35.0 gravity oil cutting 2.5 per cent through a 3/16" bean with a flow pressure of 2150 psi. Production is from the Upper A Sand perforations 13036-12980 feet. Located in the southwest quarter of Section 13-4n-17w, the completion was drilled to a total depth of 13,372 feet, cemented 7" casing at 13,256 feet and plugged back inside the casing to 13,170 feet.

Placerita Wildcat Test

McMare Oil Company drilled to 2200 feet and is running logs on McMare No. 1, a wildcat test one mile west of the Placerita Field production. Mr. Leo Moir, Jr., is doing the engineering on the well, located in the southeast quarter of Section 36-4n-16w.

Riverside County Wildcat Test

Alfred P. Wolf, 340 South Broadway, Los Angeles, has staked location for Well No. 1 in the southeast quarter of Section 28-8s-1e. The location is near Highway No. 79 between Temecula and Warner Hot Springs.

Prado Dam Wildcat Test

Alpoil Company has started Government-T.M.P.-D No. 1, a wildcat test, located in the southwest quarter of Section 17-3s-7w in Riverside County. Al Hunter is the engineer on the 2600 foot test.

Bouquet Canyon Wildcat Testing

William P. Ward's Verda No. 1 recovered 150' of 40 gravity oil and 150 feet of mud on an open hole test of the interval 2680-2748 feet. Following the test 6⅝" casing was cemented at 2680 feet and the well will be production tested at its present total depth of 2748 feet. The well is located in the northeast quarter of Section 14-4n-16w.

Orange County Well Testing

Humble Oil and Refining Company drilled to a total depth of 2200 feet on Citizens National Bank Trustee No. 1 and is recovering salt water on a swab test with a trace of oil. The test is located in the southeast quarter of Section 16-8s-7w, 2½ miles north of the Christianos Creek area where a small amount of non-commercial production was developed.

Santa Ana Canyon Wildcat

In the Santa Ana Canyon area of Riverside County, Rueter Oil Company is drilling below 700 feet on Schweppes No. 1 located in the southwest quarter of Section 25-3s-8w. Closest production to the 3000 foot wildcat test is the Chino-Mahala field two miles to the north.

NORTHERN CALIFORNIA

Standard Gas Completion

In the Cache Slough area, Standard Oil Company of Calif. completed its Peter Cook No. 12 flowing 3850 mcf of gas per day through a 5/16" bean with pressures of 1811/1940 psi and shut the well in with shut-in pressures of 1972-1972 psi. Located in the southwest quarter of Section 6-4n-3e, the well was drilled to a total depth of 7730 feet and cemented 5½" casing at 5600 feet. The casing was gun perforated from 5443-5441 and 5329-5331 feet.

San Joaquin County Completion

In the West Thornton Gas Field, Standard Oil Company of Calif. completed its Patterson Unit No. 2 flowing 2100 mcf of gas per day through a ¼" bean with pressures of 1570/1410 psi. The well was drilled to a total depth of 4500 feet and after cementing 5½" casing at 3635 feet drilled the cement out to 3566 feet and gun perforated the casing from 3513-3442 feet.

Occidental Gas Completion

Occidental Petroleum Corp. completed Arbuckle Unit S No. 1 flowing 3500 mcf of gas per day through a ⅜" bean with pressures of 1100/1500 psi, and was shut in with pressures of 2375/2550 psi. Flow was from the perforated intervals 5673-5688 feet and 5699-5710 feet. Located in the northwest quarter of Section 4-13n-2w in the Arbuckle Gas area, Colusa County, the well was first drilled to a total depth of 6874 feet and unsuccessfully tested below 6358 feet. The hole was plugged back and redrilled from 1936 feet to its present completed depth of 6538 feet and cemented 5½" casing at 5905 feet.

Amerada Wildcat Gas Test

Amerada Petroleum Corp. is drilling below 1000 feet on Garin Gas Unit No. 1 located in the northwest quarter of Section 29-5n-4e in Sacramento County. This wildcat test is in the Grand Island area three miles northwest of the Walnut Grove Gas production.

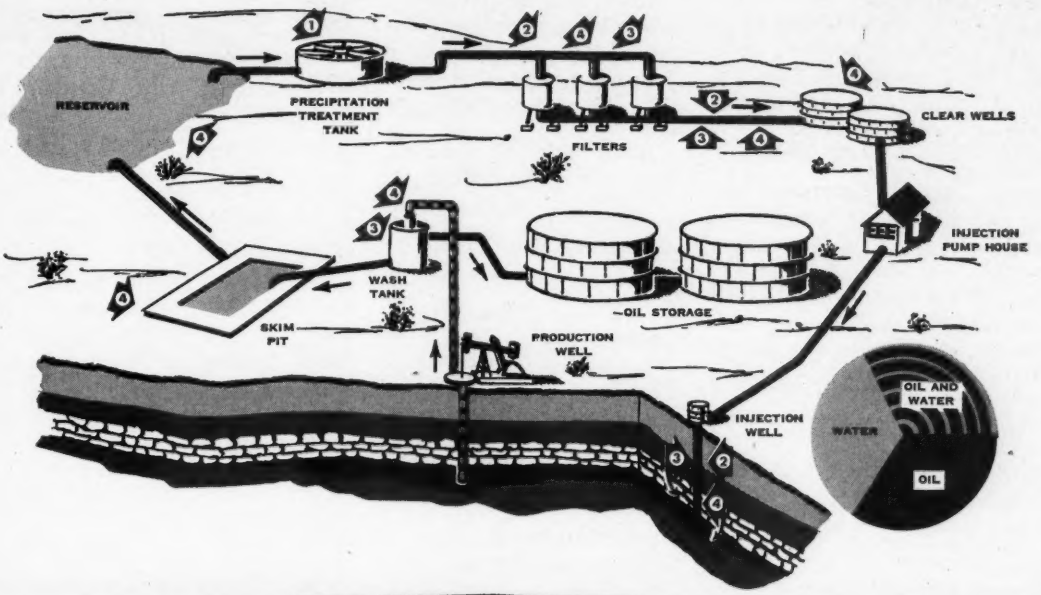
Humboldt County Gas Test

Bishop Oil and Gas Properties drilled to 2013 feet and is fishing for drill pipe on Christensen No. 1 located in the southwest quarter of Section 6-3n-1w. The test is 1800 feet west of Zephyr Oil Company's recently completed Leon-Oro-Blanco No. T-2 which flowed 4000 mcf of gas per day from four zones within the interval 4800-3900 feet. Ben Owens has the drilling contract for this new 5300 foot test.

Occidental Drills Gas Test

Occidental Petroleum Corp. is drilling below 2000 feet on Harris No. 1, its Tehama County wildcat gas test

Continuous High Input with *Visco*® Water Flood Treatments



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Polyphosphates or organic film forming inhibitors protect pipe lines and equipment against corrosive attack.

3 SCALE PREVENTION
Stabilizing treatments keep scale-forming salts in solution and maintain clean lines and an open formation with large water input volume.

4 MICROBIOLOGICAL CONTROL
Microbiological treatments help maintain clean equipment and an open formation by controlling slime, algae and sulfate reducing bacteria.

Treatments for water flood operations add up to continuous high input, low pumping costs, elimination of acidizing and back flushing and lower over-all operating and maintenance costs. Check the diagram above for points where the Visco Chemicals and Services work to improve water flood efficiency . . . Your Visco Field Service Man will be glad to work with you on any problems you have. His experience is backed by the entire facilities and skills of the world's largest water treatment organization.

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located in the southeast quarter of Section 23-26n-3w. The test is approximately one mile southwest of the abandoned McCulloch - Sunray - Stevenson No. 1 well rumored to have logged some oil sand.

Reserve Gas Test

Reserve Oil and Gas Company is preparing to spud Liberty Farms-Reynolds No. 1 located in the southeast quarter of Section 19-5n-3e. Rig site is on the southeast edge of the Maine Prairie Gas Field in Solano County.

Tehama County Completion

W. S. Payne, Operator, completed James W. Morgan et al No. 3 as a commercial gas producer and shut the well in. With the exception of the total depth of 3207 feet, details of the completion were not released. The well is 4000 feet northwest of production located in the southeast quarter of Section 8-23n-3w. The operator is drilling below 3000 feet on Junkin No. 1, a wildcat test located approximately 3000 feet northeast of Well No. 3 in the southeast quarter of Section 5-23n-3w.

Colusa County Outpost

Occidental Petroleum Corp. is grading roads and rig site for Arbuckle Unit U No. 1 to be drilled in the northeast quarter of Section 9-13n-2w. Location of the gas test is in the Arbuckle area, approximately 3000 feet southwest of present production.

Solano County Test Abandoned

Amerada Petroleum Corp. abandoned C. E. Rayn No. 1 after drilling to a total depth of 7365 feet and a redrilled depth of 4734 feet. The test was located in the southeast quarter of Section 18-6n-2e, approximately 2000 feet northeast of the company's recently completed W. E. Rayn Gas Unit No. 1.

COASTAL AREA

Texaco New Pool Discovery

In the Bardsdale area, Texaco Inc. completed Vancouver Fee No. 1 as a new pool discovery flowing 260 b/d of 32.4 gravity oil with a cut of 7.0 per cent from the Pliocene perforations 10688-10423 feet. Located in the northeast quarter of Section 11-3n-20w, the completion was drilled to a total depth of 10,709 feet and cemented 7" casing at 9414 feet. A 5" liner was landed at 10727 feet and cemented through ports at 10,143 feet.

Bardsdale Field Well

San Marino Oil Company is grading rig site for Robertson No. 5, a field development well, located in the northeast quarter of Section 12-3n-20w. The well will be bottomed at about 7000 feet.

Rincon Field Well

Chanslor-Western Oil & Development Company is preparing to drill Hobson-B No. 26-1 in the northwest quarter of Section 16-3n-24w. The well is located in the proved area of the field.

Piru Outpost Test

Kenneth H. Hunter, Jr. has awarded a contract to A. D. Rushing, Inc. to drill Colonia No. 1, an outpost test, located in the southwest quarter of Section 17-4n-18w.

Texaco South Mountain Test

In the Bridge area of the South Mountain field, Texaco Inc. is grading roads and rig site for Texaco-Union-H. I. Richardson No. B-4. Location falls in the southwest quarter of Section 14-3n-21w.

Two Monterey County Wildcats

Shell Oil Company has staked locations for two wildcat tests, both in the King City area. Kidd-Beebe No. 56-33 will be drilled in the southeast quarter of Section 33-20s-8e six miles southeast of King City. Kidd-Beebe No. 87X-3 will be drilled in the southeast quarter of Section 3-21s-8e approximately five miles west of the town of San Ardo.

SAN JOAQUIN VALLEY

San Benito County Test

Freedom General Repair and Pump Shop of Freedom, Calif., is drilling below 300 feet on Hamilton No. 1, a wildcat test located in the northeast quarter of Section 2-14s-5e near the Tres Pinos area.

San Emidio Nose Completion

Richfield Oil Corp. completed KCL-H No. 47-9 flowing 304 b/d of 30.1 gravity oil with a cut of 1 per cent. Flow was through a 20/64" bean from the perforated interval 11544-11653 feet. Located in the southwest quarter of Section 9-11n-21w, the completion was drilled to a total depth of 11,655 feet and cemented 7" casing at 11,545 feet.

Fruitvale Outpost Completed

Union Oil Company completed Conron-Rusk No. 18-8 flowing 100 b/d

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oil cutting 1.6 per cent through a 9/64" bean with pressures of 350/710 psi. Located northwest of the Fruitvale Field in the southwest quarter of Section 8-29s-27e, the well was drilled to a total depth of 4193 feet and cemented 5½" casing at 4149 feet.

Pleito Creek Test Abandoned

Shell Oil Company drilled to a total depth of 11,984 feet on KCL No. 43-34 and after running logs plugged and abandoned the well. No tests were run on the well, located in the northwest quarter of Section 34-11n-21w one-half mile northwest of the Pleito Creek field.

Fresno County Wildcat

Steele Petroleum Company is grading roads and rig site for Cantua No. 1 in the northwest quarter of Section 33-16s-13e. Location of this 7000 foot test falls approximately fifteen miles northwest of Coalinga Field production.

Wildcat Test For Shell

Northwest of the Belgian Anticline Field, Shell Oil Company has awarded a contract to Knight Drilling Company to drill Baker No. 1 in the northeast quarter of Section 7-30s-21e. The well will be a new pool wildcat test about 1½ miles northwest of Belgian Anticline production.

Socony Abandons Cuyama Test

Socony Mobil Oil Company, Inc. drilled to a total depth of 6039 feet and after running electric log and dipmeter plugged and abandoned Mobil-Union-T. K. Sterling-USL No. 83X-7. The test was located in the northeast quarter of Section 17-9n-25w seven miles southeast of the Cuyama Field.

Three McDonald Anticline Wells

Ferguson and Bosworth will drill three new wells in the field and deepen one of the present producers. Locations have been staked for Honolulu-Layman Unit No. 14, No. 38 and No. 39 all in Section 18-28s-20e. Before starting drilling on the new wells, Honolulu-Layman Unit No. 7 will be deepened.

Standard McKittrick Wildcat Test

Standard Oil Company of Calif. has staked location for Well No. 5-6-15Z in the southwest quarter of Section 15-30s-22e. Drill site for the test is approximately one mile east of the company's Spreckles well completed as a gas well flowing 500 mcf per day from the interval 1017-977 feet.

Paloma Wildcat

E. A. Bender, Operator, is moving in rotary to drill Standard-B.V.A. No. 52-36 located in the northeast quarter of Section 36-31s-25e. The test is located on the west flank of the Paloma field and will be drilled to approximately 7000 feet.

Kings County Wildcat Test

Merrill J. Brown, Operator, is grading rig site for D.R.A. No. 1 located in the southeast quarter of Section 7-23s-20e. The well will be a 1400 foot test and is one mile east of the Dudley Ridge gas field.

New Pool Discovery

Union Oil Company recompleted Well No. 44-34 in the Guijarral Hills field as a new pool discovery from the Upper McAdams Zone flowing 138 b/d of 48 gravity oil cutting 4.8 per cent. Flow was from the perforated interval 9726-9745 feet through a 14/64" bean with pressures of 2250/200 psi and 2200 mcf of gas. Located in the northwest quarter of Section 34-20s-16e, the well was first completed at a depth of 10,351 feet from the lower perforations which were cemented off before recompleting.

Fresno County New Pool Discovery

One-half mile north of Guijarral Hills production, Leda Petroleum Company completed Guijarral Service Co. No. 24X-22F flowing 35 b/d of 35.0 gravity oil with a cut of 3 per cent. Flow was through a 1" bean with 50 psi flow pressure and 195 mcf of gas. Total depth of the completion, located in the southwest quarter of Section 22-20s-16e, is 9390 feet with 5½" casing cemented at 8379 feet and gun perforated 8345-8371 feet.

Eight Cymric Development Wells

Standard Oil Company of Calif. has surveyed in locations for eight development wells in the Cymric field. Four wells, numbers 4-2A, 5-3A, 6-4A and 7-5A will be drilled in the northwest quarter of Section 36-29s-21e, and wells numbers 8-6A, 9-7A, 8-9A and 10-8A in the northeast quarter of Section 36-29s-21e.

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West McClure Valley Test

D. W. Elliott, Inc., Long Beach operator, has awarded a drilling contract to Armstrong-Fowler to drill D. W. Elliott No. 32X in the northwest quarter of Section 25-24s-17e. Location of the test is three miles west of the Pyramid Hills production and will be drilled to approximately 2800 feet.

Kings County Test To Deepen

Drilling and Production Company has moved in rotary and is cleaning out preparing to deepen Orchard No. 22-32. Located in the southwest quarter of Section 32-24s-18e, in the Pyramid Hills area, the well has been standing suspended at a depth of 3525 feet. Present plans are to deepen the hole to 5400 feet.

North Tejon Wildcat

Standard Oil Company of Calif. has staked location for Muzinich Community No. 338-16 in the southwest quarter of Section 16-11n-19w. This test will be the most easterly test of the North Tejon Field.

Trico Field

Harry H. Magee, Operator, will drill Crocker Estate No. 8, a field development well located in the southwest quarter of Section 6-25s-24e.

OTHER AREAS

Arizona

Texaco Inc. is pump testing and reportedly recovering some oil from the Devonian on its Apache County wildcat, Navajo 3 No. 1, located in the southwest quarter of Section 36-41n-30e. The perforated interval being tested is from 6793-6758 feet. The test was drilled to a total depth of 6997 feet and cemented 5½" casing at 6820 feet; cement was cleaned out to 6815 feet.

Colorado

B. F. Allison completed Dawson-Dinnsen No. 1 for a new Adams County discovery flowing 1200 mcf of gas and 20 b/d of condensate. Flow was through a ¼" bean from the J Sand perforations 5721-5715 feet. Top of the J Sand was logged at 5713 feet. Located in the southeast quarter of Section 5-2s-57w, the discovery was drilled to a total depth of 5777 feet and cemented 4½" casing at 5774 feet.

Exeter Drilling Company is preparing rig site for Ford No. 1 to be drilled in the northeast quarter of Section 22-2s-60w in Adams County. The wildcat is scheduled to go to about 6350 feet to test the J Sand and is west of the Denver Julesburg production.

Locations for two new Western Colorado wildcats are being graded. One is in Mesa County and one in Moffat County. 1½ miles west of the Divide Creek field in Moffat County, Texaco Inc. will drill Duncan Van Shaick No. 1 in the southwest quarter of Section 20-1n-100w. The well is six miles northeast of the Gillam Draw Field and will be a 5200 foot Mesaverde test. In Mesa County, Sun Oil Company has a location for Unit No. 16-A in the northeast quarter of Section 20-8s-91w. The location is 1½ miles west of Divide Creek production and will be a 5400 foot Mesaverde test.

Montana

American Climax Petroleum Company and Lawrence Barker, Jr. are drilling below 2500 feet on Cooney No. 31-13, their Wheatland County wildcat test in the Weddecomb Creek area. The test is located in the southwest quarter of Section 31-6n-16e and will be drilled to about 6800 feet to test the Frontier.

Pure Oil Company has staked location for Fee No. 1, a Judith Basin County wildcat test, located in the northeast quarter of Section 30-16n-15e. The well will be a 5600 foot Devonian test.

Continental Oil Company, American Petroleum Company and Lawrence Barker, Jr. have staked location for Government No. 20-12 in the southwest quarter of Section 20-11n-31e in Musselshell County. The well will be a 4600 foot Tyler test and is approximately one mile southwest of the Ivanhoe Field.

Cabeen Exploration Company's Lange No. 1 perforated two spots within the interval 2477-2444 feet and is recovering five barrels per hour on a swab test, of the Swift. This is a new zone for the Bear Den field. The Sunburst zone, logged from 2437-2526 feet, will be tested later. Located in the southeast quarter of Section 7-36n-6e in Liberty County, the test was drilled to a total depth of 2525 feet and cemented 4½" casing at 2524 feet.

New Mexico

Compass Exploration Company completed its Rio Arriba County discovery flowing 2485 mcf of gas per day from the Dakota, perforated at three spots within the interval 7266-7186 feet. Nearest Dakota gas production is about six miles east. Located in the southeast quarter of Section 7-24n-7w, the well was drilled to a total depth of 7331 feet and cemented 4½" casing at 7330 feet. Top of the Dakota was logged at 7010 feet.

J. Glenn Turner and William C. Webb have staked location for an outpost test on the easterly edge of the Angels Peak area. The well, Turner-McAdams No. 2, is located in the northwest quarter of Section 20-27n-9w in San Juan County and will be a Dakota test.

Union Oil Company of California has reported "an important oil discovery" on its North Anderson Ranch prospect in Lea County, New Mexico. The wildcat discovery well was completed flowing high quality 40 gravity crude oil at the rate of 1224 barrels per day through a 30/64" choke and 800 pounds tubing pressure. The well, drilled on a 360-acre Unit in which Union Oil has a 22.22 per cent interest, was completed in the Wolfcamp Zone with perforations at 9952 to 9980 feet. Union Oil has an additional 680 acres of its own in the immediate area and is preparing to drill a 100 per cent Union well offsetting the Unit discovery.

North Dakota

With the completion of Herd-Bank of North Dakota No. 1 in McHenry County, The California Company has its first producer in the county. On the open hole pump test of the Mission Canyon interval 4201-4213 feet, the gauge was 95 b/d of oil and 15 b/d of water. Located in the northeast quarter of Section 6-158n-80w, the discovery was drilled to a total depth of 4213 feet and cemented 5½" casing at 4201 feet. The closest Mission Canyon production is six miles west.

Dallia Petroleum Company completed Peterson No. 1, a northwest extension well of the Flaxon Field, flowing 120 b/d of 41.0 gravity oil with a cut of 8 per cent water through a 14/64" bean with a flow pressure of 325 psi. Flow is from the Nesson through a notch at 5831 feet. Top of the Nesson was logged at 5826 feet. The completion is located in the northeast quarter of Section 23-163n-91w in Burke County and was drilled to a total depth of 5899 feet. 4½" casing is cemented at 5894 feet.

Oregon

Humble Oil and Refining Company has acquired leases on several thousand

acres in Lake County. Location for the first wildcat test will be in Section 18-36s-18e twenty-five miles northwest of the town of Lakeview. Proposed depth of the well, Thomas Creek Unit No. 3-1, is 12,000 feet.

Mississippi

State Exploration Company of Los Angeles is ready to spud State Exploration-Crosby-Southern Minerals No. 1, a Pearl River County wildcat test, located in the southwest quarter of Section 27-2s-15w fifteen miles southeast of the Baxterville Oil Field. Located on a 7000-acre lease block, the test will be drilled to about 10,200 feet. State Exploration Co. has a ½ interest in the play with Union Oil Company of California and McCulloch Oil Exploration of California each having a ¼ interest.

Wyoming

Gulf Oil Company has graded location for Patrick Draw-State No. 1 in the northeast quarter of Section 16-18n-99w in Sweetwater County. Gulf's new location is about three miles southwest of the Patrick Draw discovery well and will be a 5000 foot Almond test.

Four miles south of Third Frontier production in the Twenty Mile Hill Field, Davis Oil Company is ready to move in on Federal-North Midway No. 1. Located in the southeast quarter of Section 23-36n-79w, the well will be a test of the Dakota at approximately 7500 feet.

The California Company is drilling below 1000 feet on Franklin Unit No. 1 located in the southwest quarter of Section 33-13n-109w. The well is the first test of a 20,154 acre unit recently approved and will go to about 6050 feet to test the Wasatch. Universal Consolidated Oil Company of Los Angeles and Sinclair Oil & Gas Company have an interest in the test. The closest production is 25 miles northwest at the Church Butte field.

Many New Uses for Asphaltum-Pitch-Bitumen-Tar

Asphalt — the ancient petroleum product that caulked Noah's Ark and waterproofed the basket in which Moses was found floating among the bullrushes—is developing into a material of unsuspected versatility in the twentieth century.

According to the magazine Petroleum Today, scientists are constantly expanding uses for the dark sticky substance which has been known since around 3800 B.C. and has been called by such names as asphaltum, bitumen, pitch and tar.

Road construction accounts for 70 per cent of United States production of asphalt. Some 90 per cent of all U. S. paved roads are asphalt surfaced, in fact. Construction savings in surfacing with asphalt range from $10,000 to $100,000 a mile, with the average saving running about $30,000 for multiple-line Interstate System type roads.

The next largest use of asphalt is for roofs, with something like six out of seven using some form of the material.

But Petroleum Today points out that these uses are by no means the limit for asphalt's "black magic."

For example:

Before Americans start mass flights into space some way must be found to protect them against cosmic radiation. A thin shield of asphalt in a space suit could do the job, according to some scientists.

Hard-pressed U. S. railroads could make good use of a new maintenance technique that could save a quarter billion dollars a year. Tests being made by the Santa Fe Railroad indicate that spraying asphalt on track ties and ballast may save as much as $1,000 a mile in annual maintenance costs on the 250,000 miles the nation's Class I railroads cover.

In semi-arid regions as much as a third of irrigation water is lost through seepage from canals and ditches. The newest technique to combat this involves the use of asphalt-coated burlap sheets to line irrigation ditches.

Petroleum Today, published by the American Petroleum Institute, listed some other places where asphalt turns up:

Clay pigeons, brake linings, tires, paints, upholstery, inks, electrical insulation, pipe coatings, dressings for tree surgery, disposable flower pots, paper bags, waterproof tennis courts, auto battery cases, auto undercoating, ship bottoms and waterproof papers.

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"I'll teach that young fellow to swear!" he roared and started up the stairs. He tripped on the top step and even his wife held her ears for a few moments.

"You'd better come down now,"she called up after the air had cleared somewhat, "he's had enough for his first lesson."

Real-estate agent to young couple: "Yes, I do have a house in your price range, but it's in Guatemala."

"It says here in the newspaper," said the old gentleman, "that a man is run over in New York every half hour."

"Dear me," exclaimed the old lady, "The poor fellow."

Last Hallowe'en a neighbor answered her doorbell and confronted a wee girl beautifully costumed but without a mask. As the child opened her paper bag to stow away her treat, the neighbor noticed that her mask lay at the bottom of the bag. "Why don't you wear your mask?" she asked.

A tiny voice whispered, "I'm scared of it."

Four-year-old Billy stood in awe of the great accomplishments of his six-year-old brother Johnny. "Can you really read?" Billy asked one day, admiration obvious in his voice.

"Sure," Johnny replied.

"What does that reading on the stove say?" Billy demanded.

Johnny regarded the brand name printed on the stove. For several seconds he tried to figure out the unfamiliar word. "I don't read stoves," he said at last. "I just read books."

A doctor was warning his patient that he should have regular habits. A hurt look in his eye, the man protested: "But I do, I do!"

"Well," asked the doctor, "how come I saw you with a well-stacked blonde at four this morning?"

"Oh, that," replied the patient, "that's one of my regular habits."

The farmer was anxiously hunting his cow which had strayed during the night. "Don't worry," said a little girl from the city, "she can't get far. I saw your hired man drain her crankcase last night."

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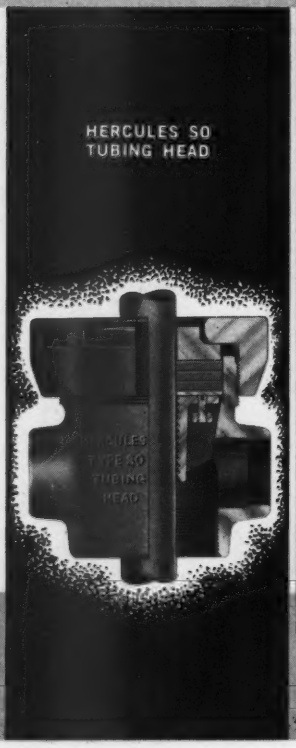

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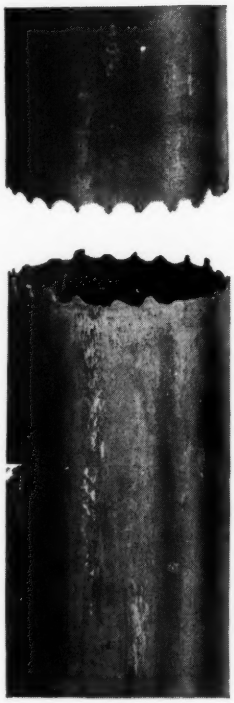

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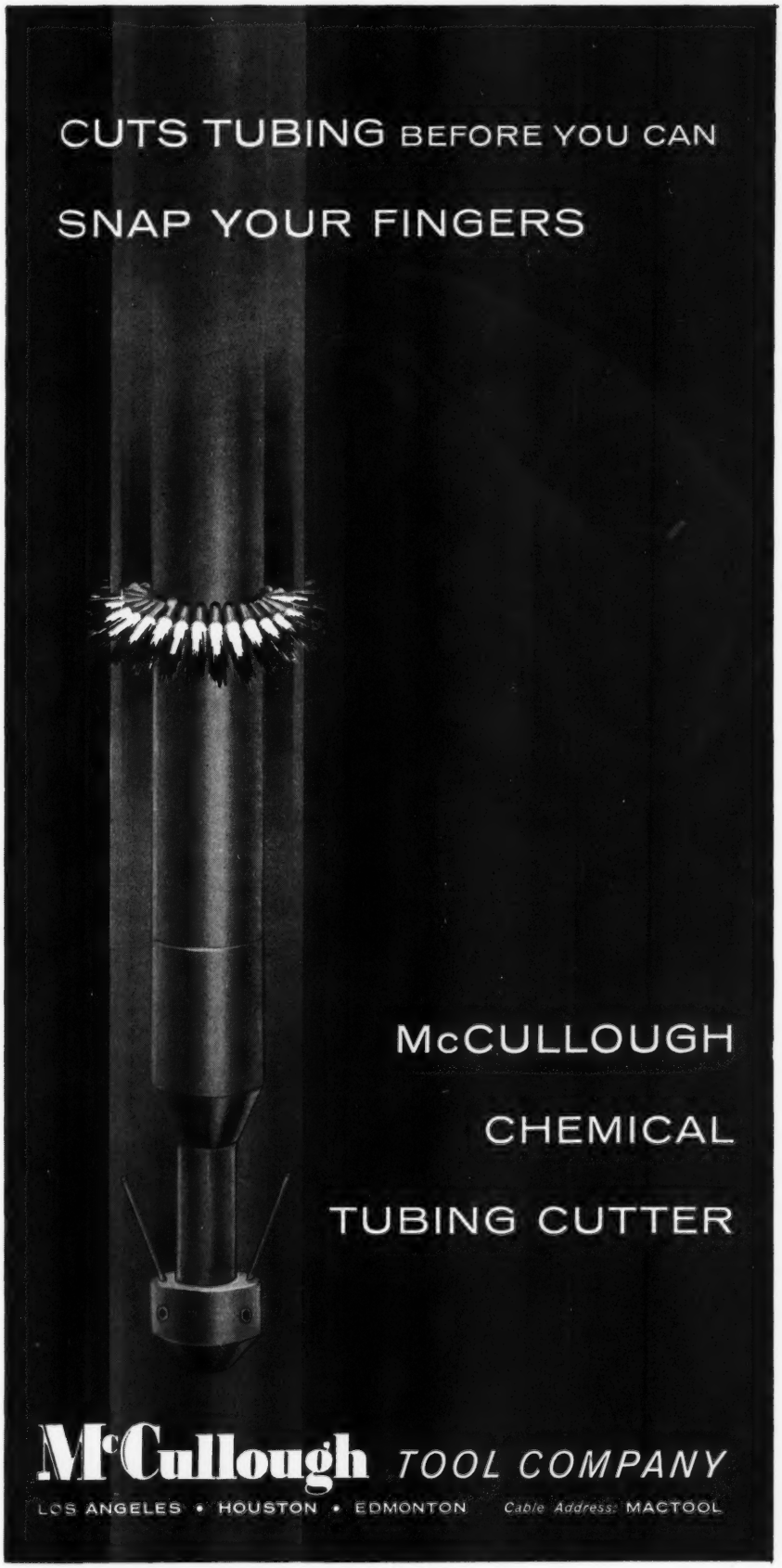

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